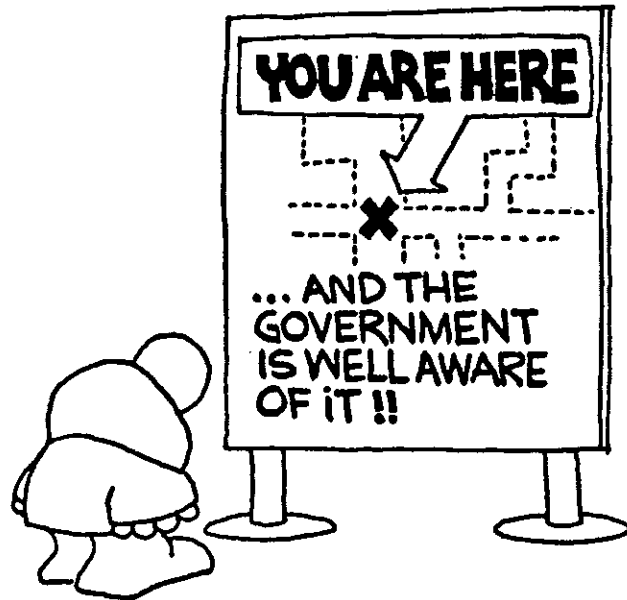


Friendship Junior High School
Sixth Grade Accelerated Math Program

Room 102A (Mr. Lavine)

3



3rd Quarter Units of Study

Equations & Inequalities
Number Lines & Radicals
Angles & Triangles
Volume & Surface Area

*Friendship Junior High School
Sixth Grade Accelerated Math
Mr. Lavine*

Third Quarter Goals and Objectives

The skill base that has been developed during the first two quarters must be in place to allow students to extend themselves into higher level units of high school algebra and geometry. After these algebra and geometry units have been completed, there will be a three week S.A.T. unit to prepare students for the college board exam. During the third quarter we will emphasize:

High School Level Algebra and Geometry Concepts
Critical Thinking & Problem Solving Applications
Consistent 92% Accuracy Level on Unit Tests
Preparation for the College Board Exam
Preparation for a More Demanding Final Exam

The final exam at the end of the quarter will be a much more comprehensive exam than students have taken up to this point in their schooling. There will be extensive instruction given about study strategies to promote success on this exam.

Performance during the third quarter will be a significant indicator concerning placement for seventh grade and beyond.

UNIT 8

Equations & Inequalities

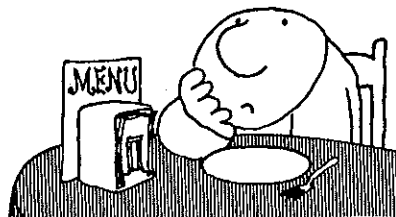
1. SIMPLE EQUATIONS

- | | |
|-----------------|-----------------|
| ① $x - 3 = 12$ | ⑥ $14 - n = -9$ |
| ② $x + 15 = 2$ | ⑦ $6 = 6 + a$ |
| ③ $x - 7 = -20$ | ⑧ $-9 = a - 4$ |
| ④ $6 + n = -15$ | ⑨ $5 = a - 15$ |
| ⑤ $8 - n = 12$ | ⑩ $12 = 12 - a$ |

2. WITH COEFFICIENT

- | | |
|-----------------------|----------------------------------|
| ① $2x = 22$ | ⑨ $\frac{-9n}{10} = \frac{3}{4}$ |
| ② $17 = -3x$ | |
| ③ $6n = 21$ | ⑩ $\frac{2}{5} = \frac{4n}{7}$ |
| ④ $18 = -4n$ | |
| ⑤ $\frac{2}{5}a = 10$ | |
| ⑥ $9 = \frac{1}{3}a$ | |
| ⑦ $\frac{2x}{3} = 8$ | |
| ⑧ $\frac{x}{4} = -6$ | |

IT'S NOT EATING ALONE
THAT I MIND SO MUCH
...IT'S ALWAYS HAVING
TO PICK UP THE CHECK !!



3. TWO-STEP EQUATIONS

- | | |
|---------------------------|----------------------------|
| ① $3x + 2 = 11$ | ⑥ $-\frac{3}{4}x - 3 = -6$ |
| ② $4a - 3 = -15$ | ⑦ $8 - 2n = 8$ |
| ③ $8 = 2n - 3$ | ⑧ $14 - 6x = -2$ |
| ④ $-6 = 5x - 6$ | ⑨ $4 = \frac{-2n}{3} + 2$ |
| ⑤ $\frac{2}{3}n - 1 = -4$ | ⑩ $8 = 4 - \frac{3a}{2}$ |

4. COMBINING TERMS

- | |
|-------------------------------|
| ① $4a - 6 = 2a - 5 + 4a$ |
| ② $3x - 4 + 7x = 18 - x$ |
| ③ $5n = 3n - 4n + 8$ |
| ④ $2x - 3 + 7 = x + 6 + (-2)$ |
| ⑤ $3n - n + 4 = -2 - 5n$ |
| ⑥ $8 - a + 4 = 3a - 2 - a$ |

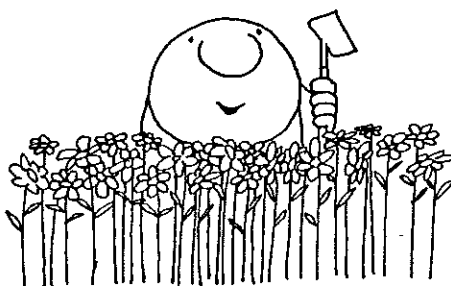
5. DISTRIBUTIVE PROP

- | |
|---------------------|
| ① $2(x + 1) = 16$ |
| ② $2(3n + 3) = -12$ |

7. INEQUALITIES

- ① $3x < 6$ ③ $-2a > 6$
② $4n \geq 8$ ④ $-\frac{2}{3}n \leq 6$

..FLOWERS HELP TO MAKE UP FOR
ALL THE UGLY IN THE WORLD!!



- ⑤ $-4 > 2(n-3)$
⑥ $-8 < -2(x+2)$
⑦ $\frac{3x}{2} - 2x > 8$
⑧ $n - \frac{3n}{2} \leq -4$
⑨ $2(a+3) < 3(2a-1)+1$
⑩ $3(4-n)+1 \geq 2(n-1)$
⑪ $\frac{2}{3} > \frac{4n}{3}$
⑫ $-\frac{4}{5} \leq \frac{-x}{10}$
⑬ $\frac{2x}{3} - 2(x-1) > 2$
⑭ $\frac{3a}{4} - 2(a+3) < 4$

- ③ $4 + 3(4+2c) = 22$
④ $3a + 5(2a-1) = 21$
⑤ $8x - 2(3x+2) = 0$
⑥ $6(3-2x) - 2(x+2) = 0$
⑦ $5(2a-1) = 5a$
⑧ $3(n+4) = 2(n-1) - 2$
⑨ $3x - 3 = 5 - 2(x+4)$
⑩ $-3n = 3(2n-4) - 6$
⑪ $4(2a-1) = 18 - 2(3-2a)$
⑫ $4n - 6 = 2(n-3)$
⑬ $4(2x+3) - 3(2x-1) = -x$
⑭ $6(a+2) - 3(3a+1) = 0$

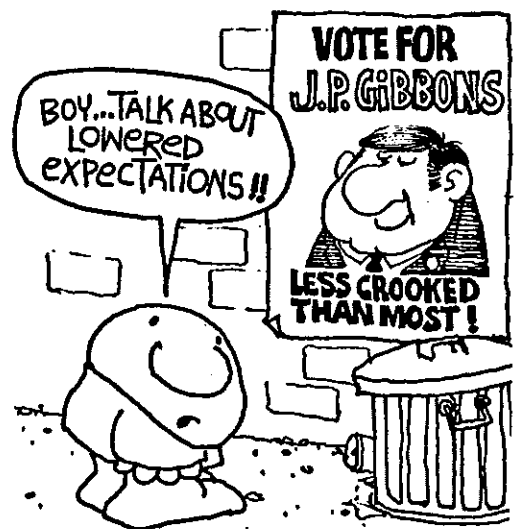
6. WITH DENOMINATOR

- ① $4n - \frac{2n}{3} = 20$
② $5 + 2x = \frac{3x}{4}$
③ $\frac{a}{5} - 2 = a - 10$
④ $3(n+4) = \frac{2n}{5} - 1$
⑤ $\frac{3x}{2} - 2x = 11 - 2(x+1)$
⑥ $\frac{8n}{7} - 3(n+1) = 10$
⑦ $9 = 2a - \frac{7a}{5}$
⑧ $-5 = 3x - \frac{4x}{3}$

8. INTEGER PROBLEMS

- ① Find three consecutive integers whose sum is 21.
- ② Find four consecutive integers whose sum is -14.
- ③ Find two consecutive even integers whose sum is -18.
- ④ Find three consecutive even integers whose sum is 0.
- ⑤ Find three consecutive odd integers whose sum is 33.
- ⑥ Find two consecutive odd integers whose sum is -12.
- ⑦ Find three consecutive even integers whose sum is 15.
- ⑧ Find two consecutive odd integers whose sum is 17.
- ⑨ Find the middle of three consecutive integers if twice the smallest is four more than the largest.
- ⑩ Find the largest of three consecutive integers if three times the middle one is three less than twice the smallest.

- ⑪ Find the largest of three consecutive even integers if three times the middle one is two less than four times the largest.
- ⑫ Find the middle of three consecutive odd integers if twice the largest is two less than four times the middle one.
- ⑬ Find the largest of three consecutive even integers if twice the smallest increased by the middle one is ten.



- ⑭ Find the larger of two consecutive odd integers if three times the smaller increased by the larger is fifty-four.
- ⑮ Twice a number increased

by two less than the number is sixteen. Find the number.

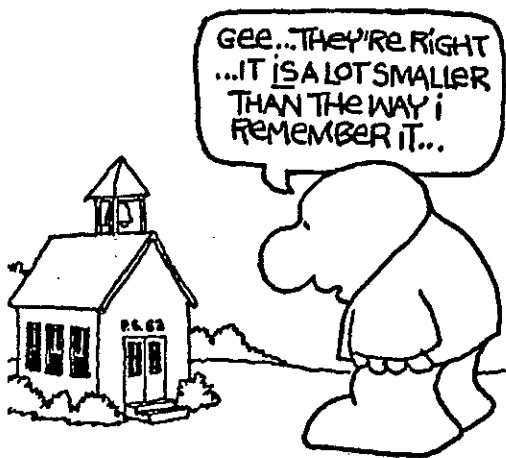
four less than twice the number is negative four. Find the number.

⑩ Three times a number increased by two more than the number is twenty-six. Find the number.

⑪ Two more than twice the number decreased by three less than the number is ten. Find the number.

⑫ Four times a number decreased by one more than twice the number is nine. Find the number.

⑫ Three less than a number decreased by two more than twice the number is zero. Find the number.



⑬ Twice a number decreased by five less than the number is four less than twice the number. Find the number.

9. REVIEW

⑭ Twice a number decreased by three more than the number is nine. Find the number.

$$\textcircled{1} \frac{2n}{3} = -4 \quad \textcircled{2} \frac{6}{8} = \frac{-3n}{20}$$

⑮ Three times a number decreased by two more than the number is negative four. Find the number.

$$\textcircled{3} 2(a+4) = 3(2a-1) - 1$$

$$\textcircled{4} 6(2x+1) + 21 = 3(4-x)$$

$$\textcircled{5} 6n - \frac{2n}{3} - 12 = 20$$

$$\textcircled{6} 8a - \frac{3a}{4} + 15 = -14$$

$$\textcircled{7} -3x > 15$$

⑯ A number decreased by

$$\textcircled{8} 14 \leq -2n$$

$$\textcircled{9} \quad \frac{-3n}{5} > \frac{6}{5}$$

$$\textcircled{10} \quad \frac{-8}{3} \leq \frac{n}{6}$$

$$\textcircled{11} \quad 6 - 2(n-3) > 3n + 2$$

$$\textcircled{12} \quad 10 - 3(4-2n) < 4n - 8$$

$$\textcircled{13} \quad 4n - \frac{2n}{3} > 2(n-1) - 6$$

$$\textcircled{14} \quad n + \frac{3n}{5} < -3(2-n) - 1$$

$\textcircled{15}$ Find three consecutive integers whose sum is -18 .

$\textcircled{16}$ Find four consecutive integers whose sum is -6 .

$\textcircled{17}$ Find the middle of three consecutive even integers if twice the smallest is two more than the largest.

$\textcircled{18}$ Find the largest of three consecutive even integers if three times the middle one is two less than four times the smallest one.

$\textcircled{19}$ Find the larger of two consecutive odd integers if three times the larger one increased by the smaller one is negative fourteen.

$\textcircled{20}$ Find the middle of three

consecutive odd integers if three times the smallest increased by twice the largest is twenty-three.

$\textcircled{21}$ Twice a number decreased by one more than the number is five. Find the number.

$\textcircled{22}$ Three times a number decreased by two less than twice the number is six. Find the number.

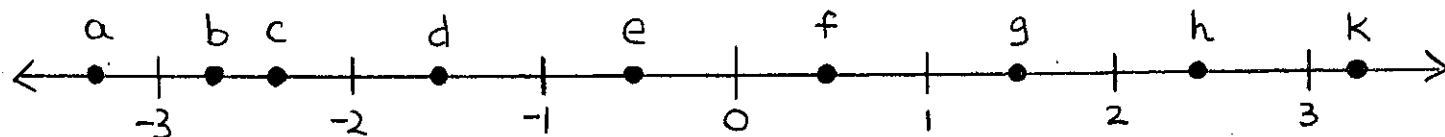
$\textcircled{23}$ Two more than twice a number decreased by three less than the number is equal to one less than three times the number. Find the number.

$\textcircled{24}$ Three less than four times a number decreased by four more than twice the number is equal to four more than the number. Find the number.



UNIT 9

Number Lines & Radicals



1. ABSOLUTE VALUE

- | | |
|-----------|--------------------------|
| ① $ 7 $ | ⑥ $- -5 \times -3 $ |
| ② $ -7 $ | ⑦ $- -3 ^2$ |
| ③ $ 15 $ | ⑧ $- -3^2 $ |
| ④ $ -15 $ | ⑨ $ 16 - (-3)(-8) $ |
| ⑤ $- -8 $ | ⑩ $- -3 - (-6) - 2 $ |

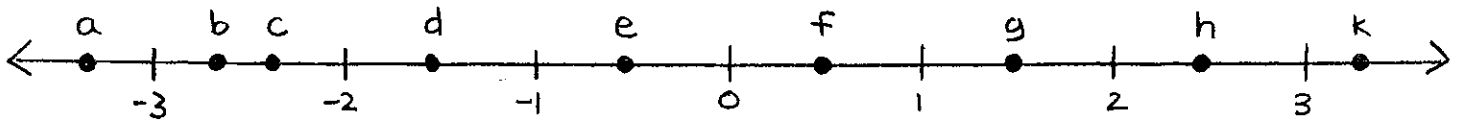
2. NUMBER LINES

- | | |
|---------------------------|-------------------|
| ① $g \square e$ | ⑩ $3d \square -1$ |
| ② $d \square h$ | ⑪ $f+g \square 0$ |
| ③ $f \square -2$ | ⑫ $e+c \square 0$ |
| ④ $-1 \square e$ | ⑬ $e+f \square 0$ |
| ⑤ $\frac{1}{2} \square f$ | ⑭ $f+h \square 2$ |
| ⑥ $c \square -a$ | ⑮ $h-f \square 0$ |
| ⑦ $g \square -b$ | ⑯ $g-k \square 0$ |
| ⑧ $2f \square 2$ | ⑰ $b-d \square 0$ |
| ⑨ $3d \square -6$ | ⑱ $f-e \square 0$ |

- | | |
|---------------------|-------------------|
| ⑲ $d+f \square 0$ | ⑳ $f+g \square 1$ |
| ㉑ $g-e \square f-g$ | |
| ㉒ $h-g \square h-f$ | |
| ㉓ $c-a \square b-d$ | |

3. NUMBER LINES

- | | |
|---------------------|---------------------|
| ① $g^2 \square g^3$ | ⑪ $f \square f^2$ |
| ② $h^3 \square h^4$ | ⑫ $f^2 \square f^3$ |
| ③ $d^2 \square d^3$ | ⑬ $e \square e^2$ |
| ④ $c^3 \square c^4$ | ⑭ $e \square e^3$ |
| ⑤ $d \square d^3$ | ⑮ $e^3 \square e^5$ |
| ⑥ $c^3 \square c^5$ | ⑯ $f^4 \square g$ |
| ⑦ $g^2 \square c^2$ | ⑰ $f^2 \square -h$ |
| ⑧ $h^2 \square d^2$ | ⑱ $e^2 \square -f$ |
| ⑨ $g^2 \square d^2$ | ⑲ $e^3 \square d^3$ |
| ⑩ $b^2 \square c^2$ | ㉑ $e^2 \square d^2$ |



4. NUMBER LINES

① $gh \square gd$

② $fd \square bc$

③ $gh \square h^2$

④ $dc \square d^2$

⑤ $abc \square g^3$

⑥ $2c \square bc$

⑦ $\frac{d}{g} \square \frac{g}{h}$

⑧ $\frac{g}{g^2} \square \frac{c}{k}$

⑨ $\frac{b}{c} \square e$

⑩ $d^2 \square \frac{g}{g^2}$

⑪ $\frac{a}{d} \square \frac{g}{g^2}$

⑫ $\frac{ab}{c} \square \frac{d}{c}$

⑬ $\frac{g}{h} \square 1$

⑭ $\frac{c}{d} \square 1$

⑮ $\frac{f}{g+h} \square g$

⑯ $d(d-e) \square dg$

⑰ $d(g-f) \square bc$

⑱ $g+h \square 5$

⑲ $c+d \square -5$

⑳ $h-f \square 1$

㉑ $d-f \square -1$

㉒ $h-d \square fh$

㉓ $g-d \square 2g$

㉔ $dg \square -1$

㉕ $eh \square -3$

㉖ $-d^2 \square g^2$

㉗ $-g^3 \square -d^3$

㉘ $\frac{a}{b} \square f$

㉙ $\frac{g}{h} \square 1$

㉚ $a(h-f) \square \frac{d}{h}$

㉛ $e(1-g) \square \frac{h}{g}$

㉜ $f+h \square c^2$

㉝ $g+h \square -2a$

㉞ $e^2 \square e^3$

㉟ $f^2 \square f^3$

㊱ $abg \square bcd$

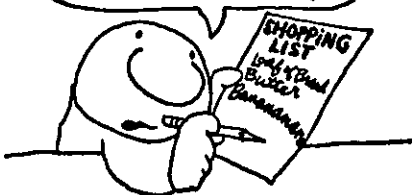
㊲ $d-e \square c$

5. NUMBER LINES

① $a(f+g) \square h(f+k)$

② $g(h-g) \square h(g-h)$

..IT'S NOT THAT I CAN'T SPELL BANANAS...
IT'S JUST THAT I DON'T KNOW WHEN TO STOP!



6. RADICALS & NUMBER LINES

Place the following points on a number line :

- | | |
|--------------------|--------------------|
| ① $A = \sqrt{16}$ | ⑨ $I = -\sqrt{30}$ |
| ② $B = \sqrt{36}$ | ⑩ $J = -\sqrt{99}$ |
| ③ $C = -\sqrt{49}$ | ⑪ $K = -\sqrt{10}$ |
| ④ $D = -\sqrt{4}$ | ⑫ $L = -\sqrt{70}$ |
| ⑤ $E = \sqrt{1}$ | ⑬ $m = \sqrt{81}$ |
| ⑥ $F = \sqrt{40}$ | ⑭ $N = \sqrt{120}$ |
| ⑦ $G = \sqrt{90}$ | ⑮ $O = \sqrt{6}$ |
| ⑧ $H = \sqrt{26}$ | ⑯ $P = \sqrt{50}$ |

7. SIMPLIFYING RADICALS

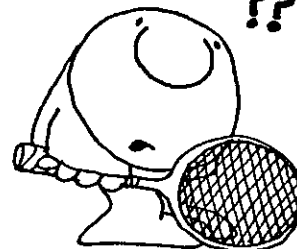
- | | | |
|----------------|----------------|--------------------------|
| ① $\sqrt{49}$ | ⑨ $\sqrt{90}$ | ⑰ $\sqrt{\frac{49}{64}}$ |
| ② $\sqrt{64}$ | ⑩ $\sqrt{24}$ | ⑱ $\sqrt{\frac{4}{9}}$ |
| ③ $\sqrt{120}$ | ⑪ $\sqrt{12}$ | ⑲ $\sqrt{\frac{25}{36}}$ |
| ④ $\sqrt{72}$ | ⑫ $\sqrt{98}$ | ⑳ $\sqrt{\frac{1}{81}}$ |
| ⑤ $\sqrt{50}$ | ⑬ $\sqrt{200}$ | ㉑ $\frac{2\sqrt{27}}{3}$ |
| ⑥ $\sqrt{112}$ | ⑭ $\sqrt{240}$ | ㉒ $\frac{3\sqrt{32}}{8}$ |
| ⑦ $\sqrt{48}$ | ⑮ $\sqrt{14}$ | |
| ⑧ $\sqrt{80}$ | ⑯ $\sqrt{6}$ | |

8. ADDING & SUBTRACTING

- | | |
|---------------------------|---------------------------|
| ① $\sqrt{3} + 2\sqrt{3}$ | ④ $5\sqrt{2} - 4\sqrt{2}$ |
| ② $3\sqrt{5} + 4\sqrt{5}$ | ⑤ $3\sqrt{3} + 2\sqrt{2}$ |
| ③ $2\sqrt{7} - \sqrt{7}$ | ⑥ $\sqrt{6} + 2\sqrt{5}$ |

- | | |
|---------------------------------------|--|
| ⑦ $3\sqrt{3} - 3\sqrt{3}$ | ⑫ $4\sqrt{2} - 3\sqrt{6} - \sqrt{8}$ |
| ⑧ $-4\sqrt{2} + 4\sqrt{2}$ | ⑬ $\sqrt{32} - \sqrt{18} + \sqrt{50}$ |
| ⑨ $3\sqrt{2} + \sqrt{18}$ | ⑭ $2\sqrt{27} + \sqrt{12} - 8\sqrt{3}$ |
| ⑩ $4\sqrt{5} + \sqrt{20}$ | ⑮ $3\sqrt{5} - \sqrt{20} - \sqrt{5}$ |
| ⑪ $2\sqrt{3} + 3\sqrt{2} - \sqrt{27}$ | ⑯ $2\sqrt{8} - 3\sqrt{2}$ |

..HOW CAN SO MANY
PEOPLE GET TURNED ON
BY A GAME WHERE
LOVE MEANS NOTHING
??



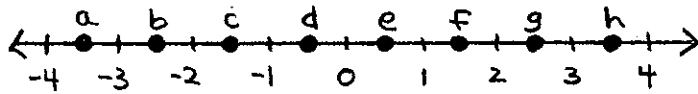
9. MULTIPLICATION / DISTRIBUTIVE PROP

- | | |
|----------------------------|-------------------------------------|
| ① $(\sqrt{3})(\sqrt{2})$ | ⑬ $(3\sqrt{3})(2\sqrt{3})$ |
| ② $(\sqrt{5})(\sqrt{7})$ | ⑭ $(4\sqrt{6})(2\sqrt{6})$ |
| ③ $(\sqrt{6})(\sqrt{3})$ | ⑮ $2(2\sqrt{6} + \sqrt{24})$ |
| ④ $(\sqrt{8})(\sqrt{6})$ | ⑯ $3(\sqrt{8} + 2\sqrt{2})$ |
| ⑤ $(\sqrt{12})(-\sqrt{3})$ | ⑰ $2\sqrt{2}(3 - 2\sqrt{3})$ |
| ⑥ $(\sqrt{20})(-\sqrt{5})$ | ⑱ $3\sqrt{3}(4\sqrt{3} - 1)$ |
| ⑦ $(\sqrt{7})(\sqrt{7})$ | ⑲ $4\sqrt{6}(2\sqrt{2} - \sqrt{6})$ |
| ⑧ $(\sqrt{3})(\sqrt{3})$ | ㉑ $\sqrt{3}(3\sqrt{3} - \sqrt{6})$ |
| ⑨ $(\sqrt{6})^2$ | |
| ⑩ $(\sqrt{5})^2$ | |
| ⑪ $(2\sqrt{3})(3\sqrt{2})$ | |
| ⑫ $(4\sqrt{2})(2\sqrt{5})$ | |

10. REVIEW

Absolute value:

- ① $|-3|$ ③ $-|-2|$ ⑤ $|-2^2 - (-3)^2|$
 ② $|7|$ ④ $-|-3|^2$ ⑥ $|(-2)^3 - (-2)|$



Number line:

- ⑦ $e - c \square d - f$ ⑩ $bg \square cd$
 ⑧ $e - g \square d - b$ ⑪ $f + g \square 5$
 ⑨ $f \square f^2$ ⑫ $h - e \square 2$
 ⑬ $g^3 \square g^2$ ⑭ $2(d - b) \square 1$
 ⑮ $c^2 \square c$ ⑯ $3(c + d) \square -2$
 ⑰ $b^2 \square b^3$ ⑲ $f/g \square h/g$
 ⑱ $e \square e^2$ ⑳ $b/c \square e/g$
 ㉑ $e^4 \square e^3$ ㉒ $b/f \square d$
 ㉓ $abc \square ab$

Place each of the following on a number line:

- ⑳ $A = \sqrt{64}$ ㉑ $D = \sqrt{38}$
 ㉒ $B = -\sqrt{49}$ ㉓ $E = \sqrt{10}$
 ㉔ $C = -\sqrt{24}$ ㉕ $F = -\sqrt{33}$

Simplify each radical:

- ⑳ $\sqrt{81}$ ㉑ $\sqrt{60}$ ㉒ $\sqrt{1/25}$
 ㉓ $\sqrt{169}$ ㉔ $\sqrt{1000}$ ㉕ $\sqrt{4/49}$
 ㉖ $\sqrt{250}$ ㉗ $\sqrt{96}$

- ㉘ $\frac{2\sqrt{27}}{9}$ ㉙ $\frac{3\sqrt{8}}{2}$ ㉚ $\frac{\sqrt{12}}{2}$

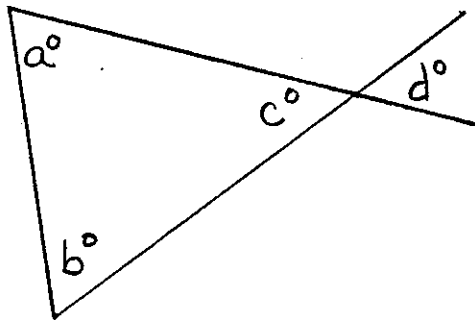
Radical operations:

- ㉛ $3\sqrt{5} + 2\sqrt{5}$
 ㉜ $4\sqrt{2} + \sqrt{2}$
 ㉝ $5\sqrt{7} - \sqrt{7}$
 ㉞ $6\sqrt{3} - 8\sqrt{3}$
 ㉟ $2\sqrt{3} + \sqrt{27}$
 ㊱ $3\sqrt{8} + 2\sqrt{2}$
 ㊲ $4\sqrt{12} - 9\sqrt{3}$
 ㊳ $3\sqrt{8} - 2\sqrt{3} + 3\sqrt{2}$
 ㊴ $4\sqrt{12} + 2\sqrt{6} - 2\sqrt{3}$
 ㊵ $(2\sqrt{2})(3\sqrt{3})$
 ㊶ $(\sqrt{5})(2\sqrt{2})$
 ㊷ $(-\sqrt{6})(2\sqrt{12})$
 ㊸ $(-3\sqrt{2})(-2\sqrt{6})$
 ㊹ $(\sqrt{3})^2$
 ㊺ $(-\sqrt{5})^2$
 ㊻ $3(2\sqrt{3} - 3\sqrt{2})$
 ㊼ $2(6 - 2\sqrt{5})$
 ㊽ $\sqrt{3}(2\sqrt{6} - \sqrt{3})$
 ㊾ $2\sqrt{2}(\sqrt{8} + 3\sqrt{2})$
 ㊿ $3\sqrt{3}(2\sqrt{3} + 2\sqrt{12})$

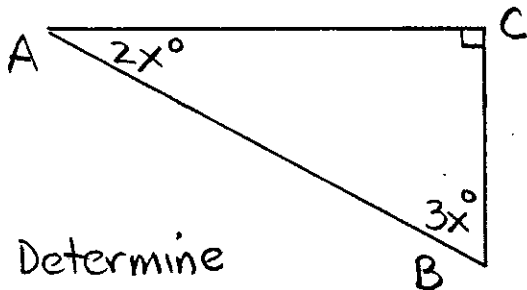
UNIT 10

Angles & Triangles

1. ANGLE RELATIONSHIPS



- ① If $a = 75$ and $b = 50$, determine d

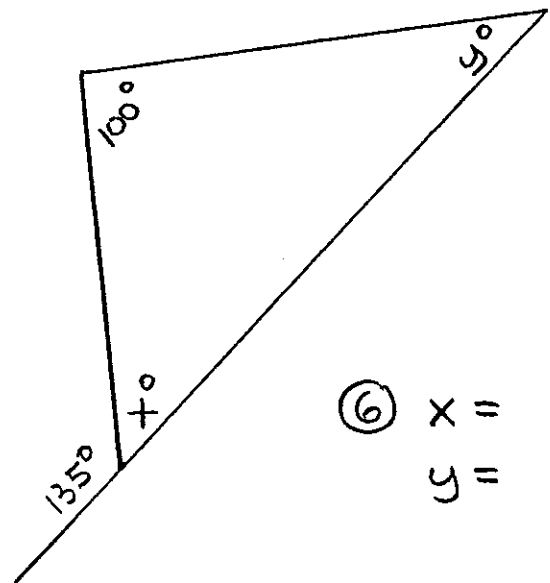


- ② Determine $\angle ABC$

- ③ How many degrees in the sum of the angles of an octagon?

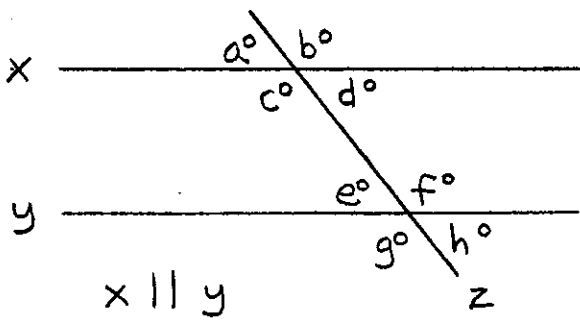
- ④ What is the measure of each angle in a regular hexagon?

- ⑤ If two angles of a parallelogram are 60° , what are the other two angles?



- ⑥ $x =$
 $y =$

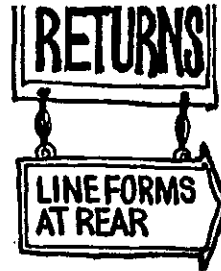
Questions 7-18 refer to the following diagram:



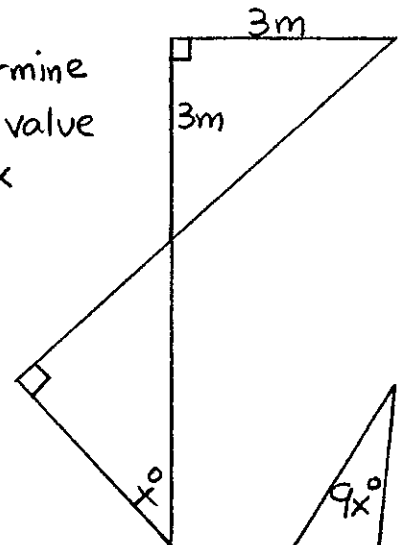
- ⑦ What angle is vertical to $\angle c$?
- ⑧ What angles are supplementary to $\angle e$? (four answers)
- ⑨ What angle corresponds to $\angle g$?
- ⑩ What angle corresponds to $\angle b$?
- ⑪ What angles form a linear pair with $\angle f$? (two answers)
- ⑫ Name two pairs of alternate interior angles?
- ⑬ If $a = 45$, find f
- ⑭ If $b = 110$, find g
- ⑮ (T/F) $\angle c$ and $\angle e$ are adjacent angles.
- ⑯ (T/F) $d = h$

⑰ (T/F) $d + f = 180$

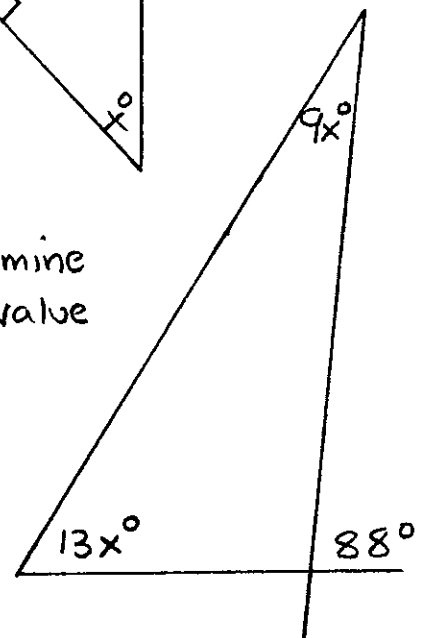
⑱ What do we call line segment \overline{z} ?

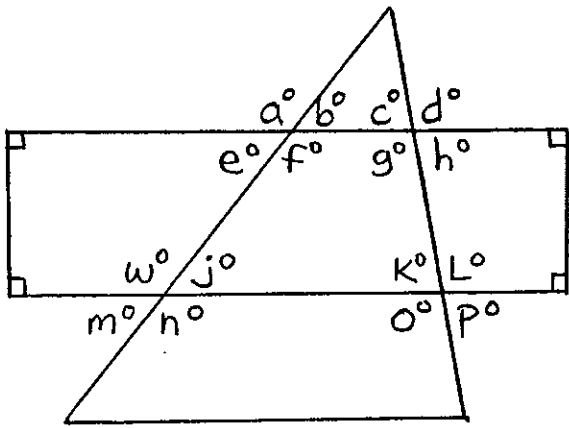


⑲ Determine the value of x

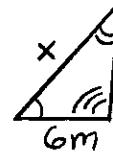
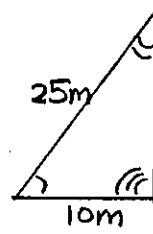


⑳ Determine the value of x

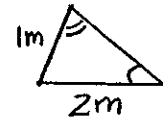
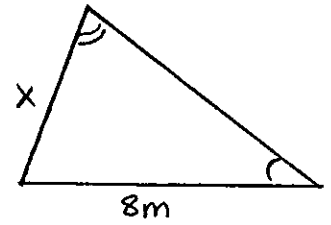




②

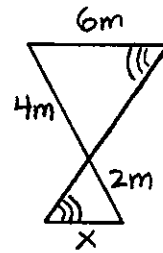


③

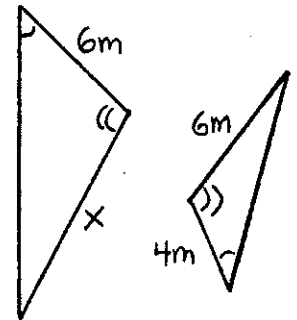


- ⑳ (T/F) $m + f = c + d$
- ㉑ (T/F) $c = p$
- ㉒ (T/F) $b + e = d + g$
- ㉓ (T/F) $d = p$
- ㉔ (T/F) $e + f = g + k$
- ㉕ (T/F) $d = g = o$
- ㉖ (T/F) $\angle f$ and $\angle g$ are adjacent angles
- ㉗ (T/F) $\angle j$ and $\angle f$ are supplementary

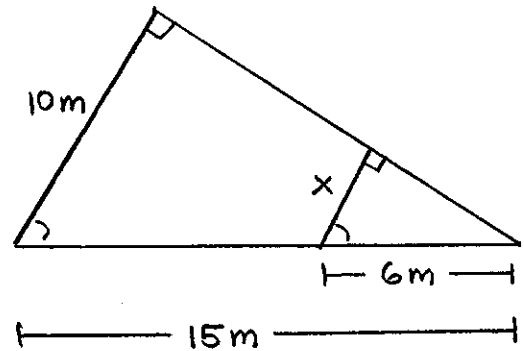
④



⑤



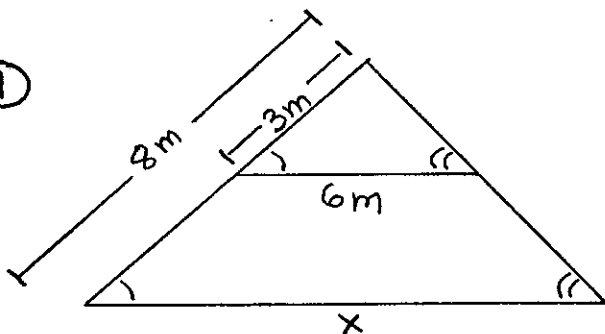
⑥



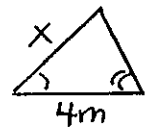
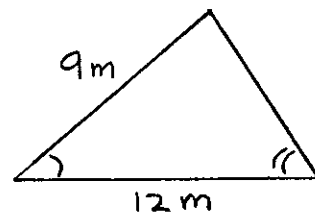
2. SIMILAR TRIANGLES

Determine "x" in each of these similar triangles:

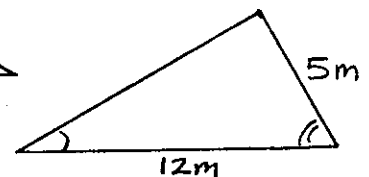
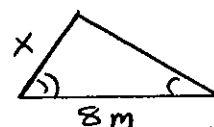
①

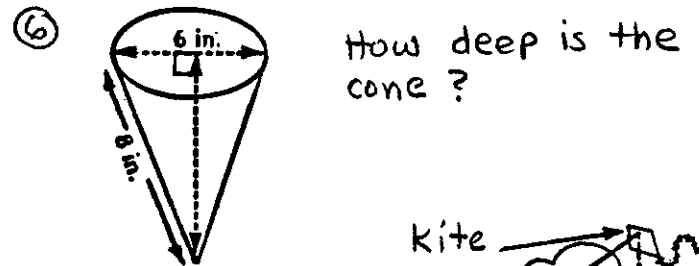
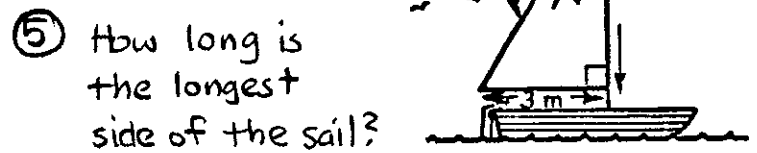
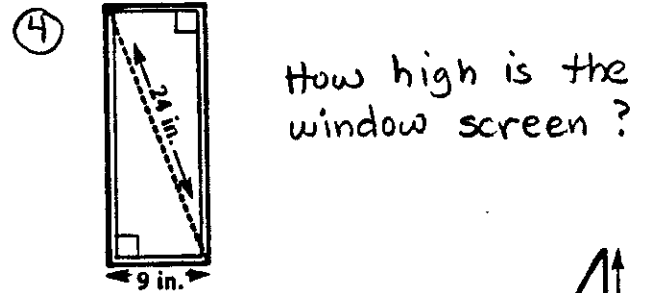
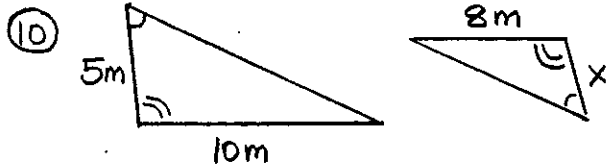
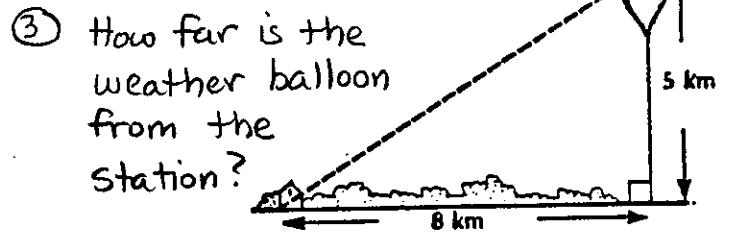
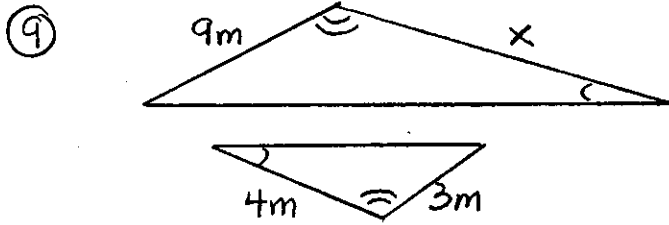


⑦

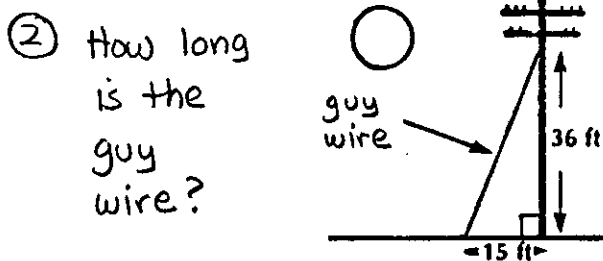
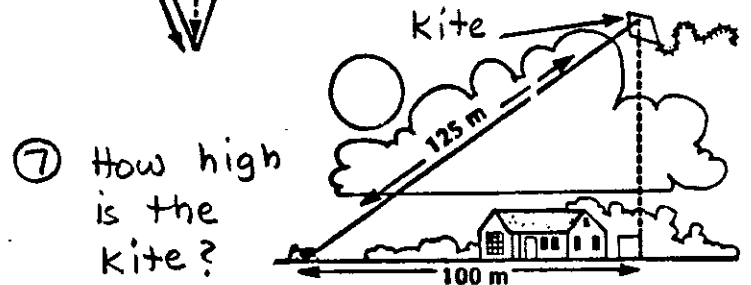
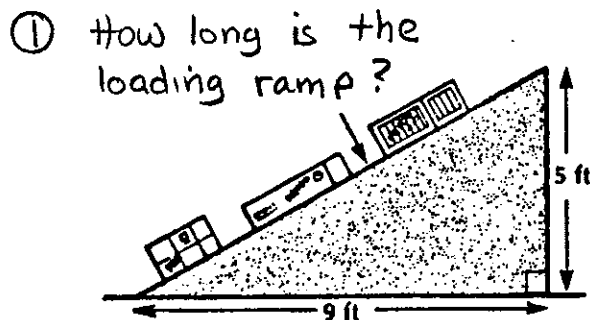


⑧

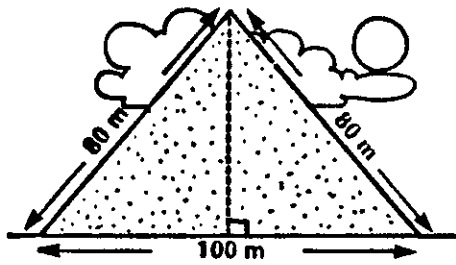




3. PYTHAGOREAN THEOREM

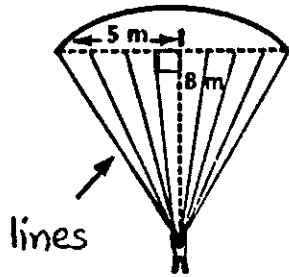


9



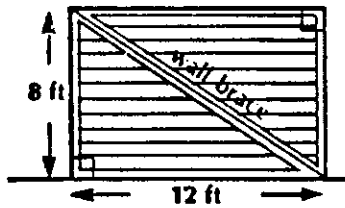
How high is the pyramid?

10



How long are the suspension lines of the parachute?

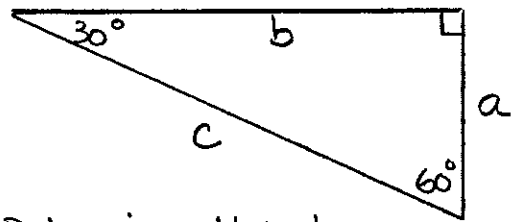
11 How long is the wall brace?



12 How long is the rafter?



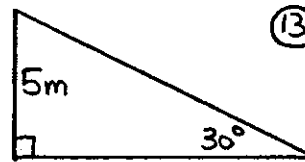
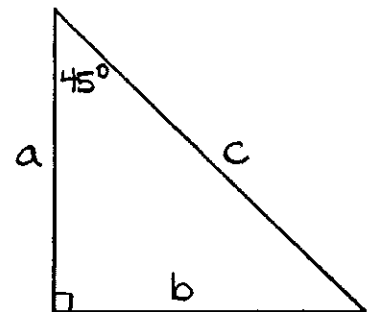
4. SPECIAL RIGHT TRIANGLES



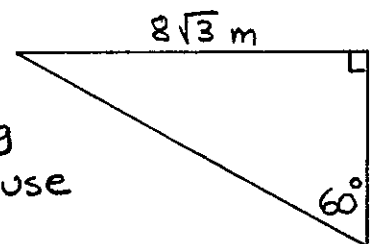
Determine the two missing sides:

- ① $a = 4 \text{ cm}$
- ② $c = 12 \text{ cm}$
- ③ $b = 7 \text{ m}$
- ④ $b = 9\sqrt{6} \text{ m}$
- ⑤ $c = 8\sqrt{3} \text{ m}$
- ⑥ $b = 6\sqrt{2} \text{ m}$

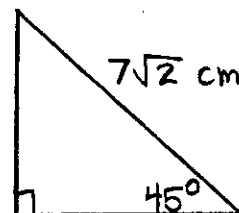
- ⑦ $a = 10 \text{ m}$
- ⑧ $b = 3\sqrt{2} \text{ cm}$
- ⑨ $c = 12 \text{ m}$
- ⑩ $c = 4\sqrt{2} \text{ cm}$
- ⑪ $c = 6\sqrt{6} \text{ m}$
- ⑫ $a = 3\sqrt{3} \text{ cm}$



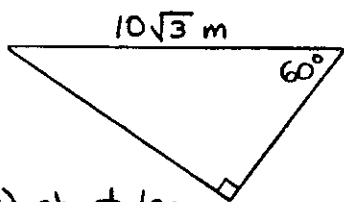
- ⑬ a) hypotenuse
- b) long leg



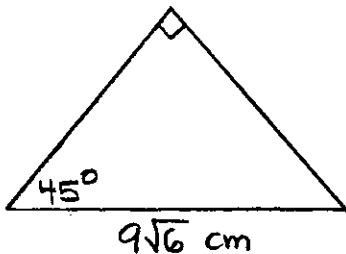
- ⑭ a) short leg
- b) hypotenuse



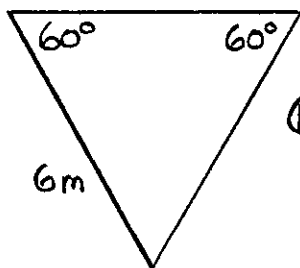
- ⑮ leg



- ⑩ a) short leg
b) long leg

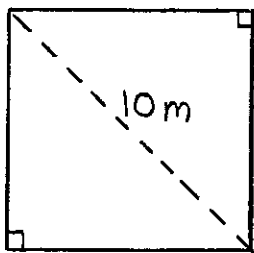


- ⑪ leg

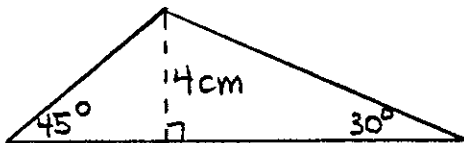


- ⑫ what is the height of this equilateral triangle?

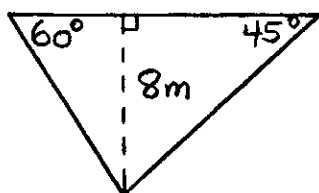
- ⑬ Determine the measure of a side of this square?



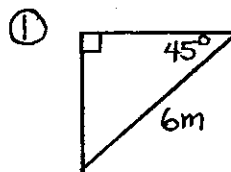
- ⑭ Find the measures of all three sides:



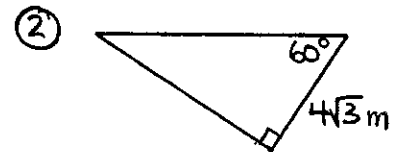
- ⑮ Find the measures of all three sides:



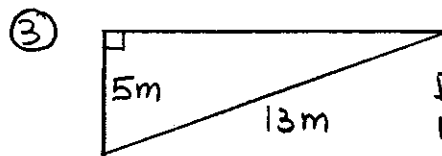
5. REVIEW



Determine the leg

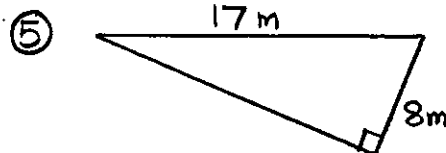
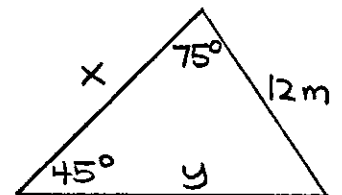


a) long leg
b) hypotenuse



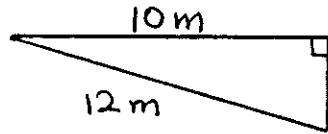
Determine the long leg

- ④ a) side x
b) side y

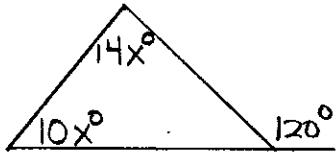


Determine the leg

⑥ Determine the leg

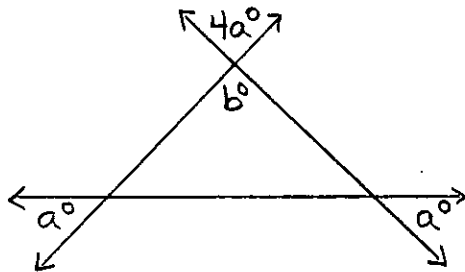


⑦

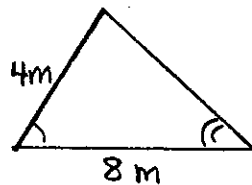
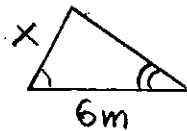


Give all three angles

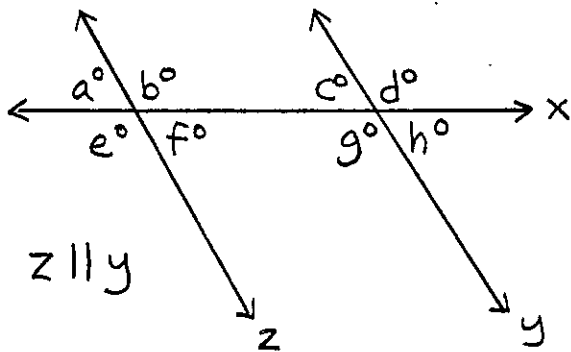
⑧ Determine b :



⑨ Determine x



Questions 10-18 refer to the following diagram:



⑩ What is the name of line \overleftrightarrow{x} ?

⑪ Name an angle that is vertical to $\angle g$?

⑫ Name 2 angles adjacent to $\angle b$.

⑬ Name 4 angles supplementary to $\angle e$.

⑭ If angles are both adjacent and supplementary, they form a _____.

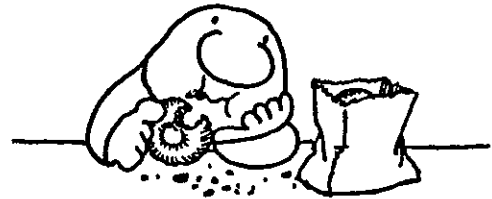
⑮ Name 2 pairs of alternate interior angles.

⑯ What angle corresponds to $\angle f$?

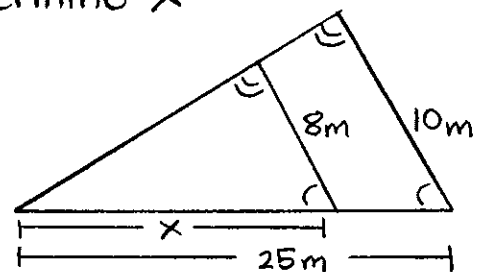
⑰ If $a = 45$, evaluate $4e - f$

⑱ If $b = 115$, evaluate $3c - 2d$

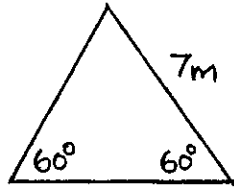
WHEN THE GOING GETS TOUGH...
...I EAT DONUTS!!



⑲ Determine x



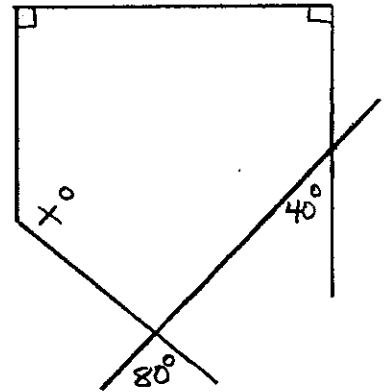
- 20) Determine the height of this triangle?



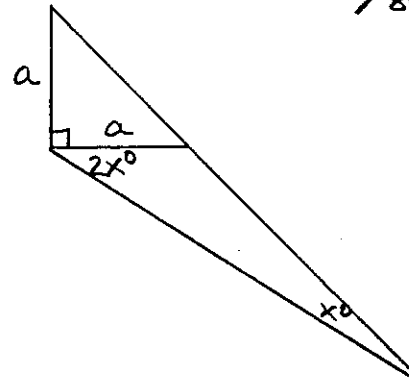
- 29) Determine x



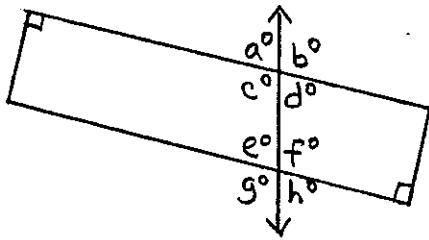
- 30) Determine x



- 31) Determine x

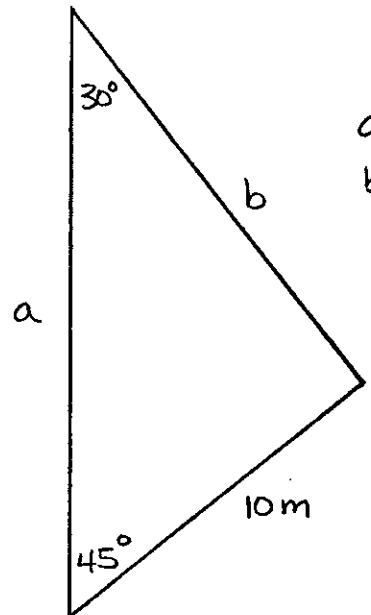


Questions 22-28 refer to the following diagram:



- 22) (T/F) $c = b$
 23) (T/F) $e + h = 180$
 24) (T/F) $d = h$
 25) (T/F) $d = e = a$
 26) (T/F) $h + c = 180$
 27) (T/F) $\angle b$ and $\angle g$ are alternate interior angles
 28) (T/F) Because the transversal intersects a rectangle, it is not necessary to state that line segments are parallel (||) in the diagram.

- 32)



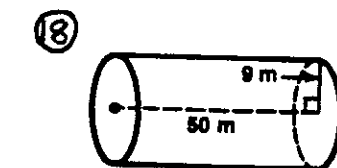
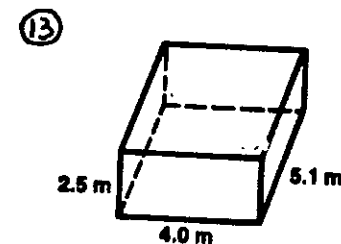
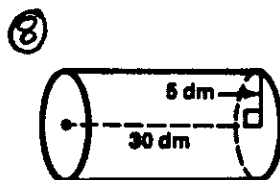
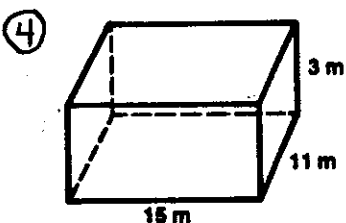
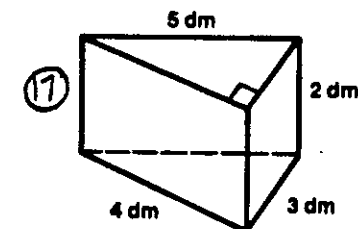
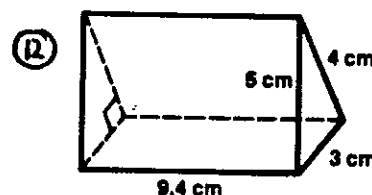
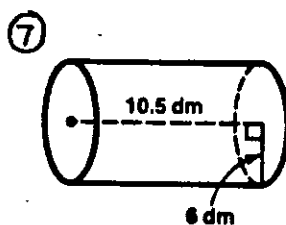
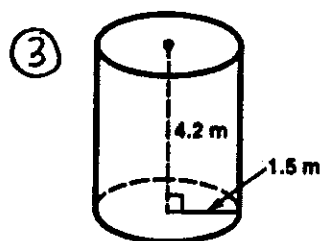
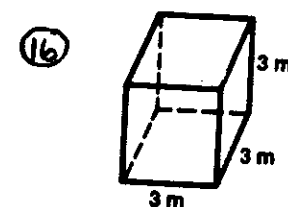
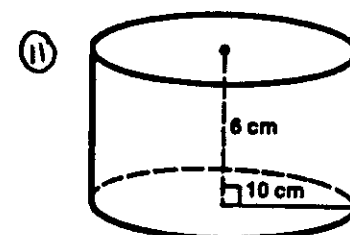
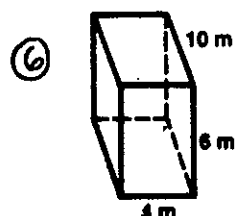
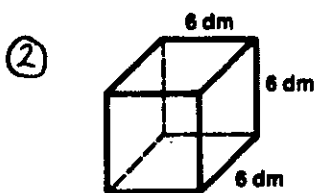
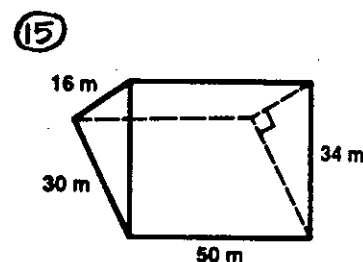
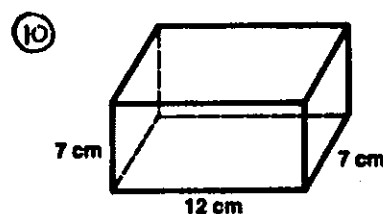
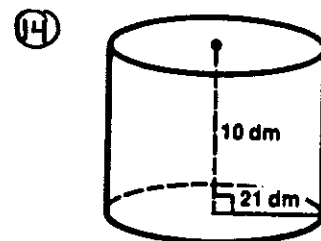
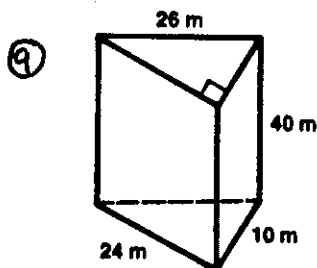
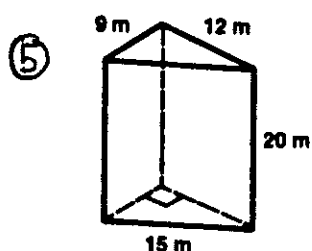
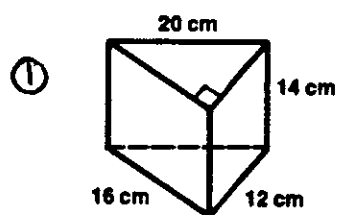
- a) $a =$
 b) $b =$

UNIT 11

Volume & Surface Area

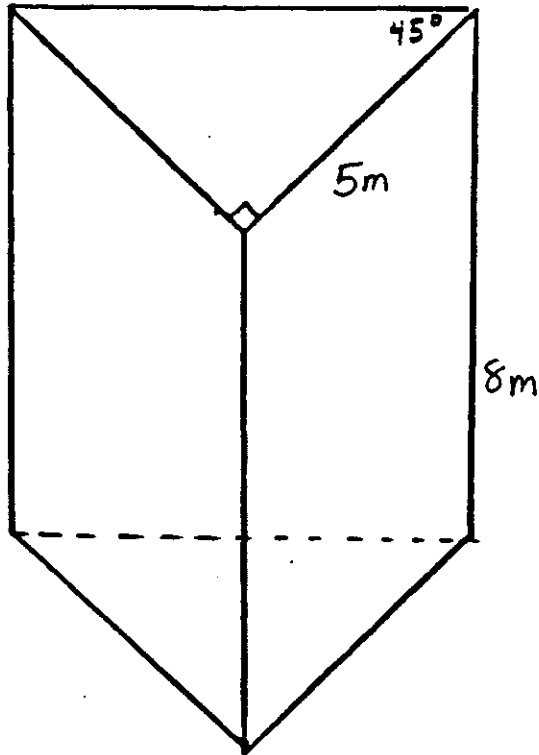
1. PRISMS & CYLINDERS

Determine volume and surface area

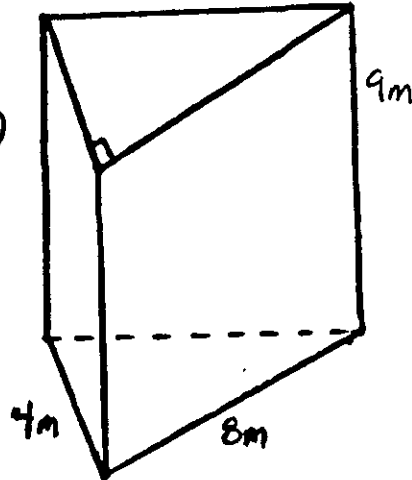


2. RIGHT TRIANGULAR PRISMS

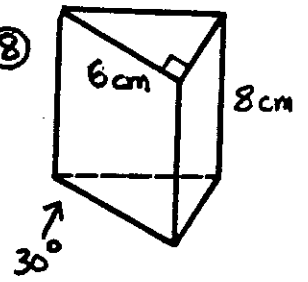
①



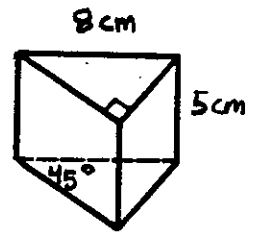
④



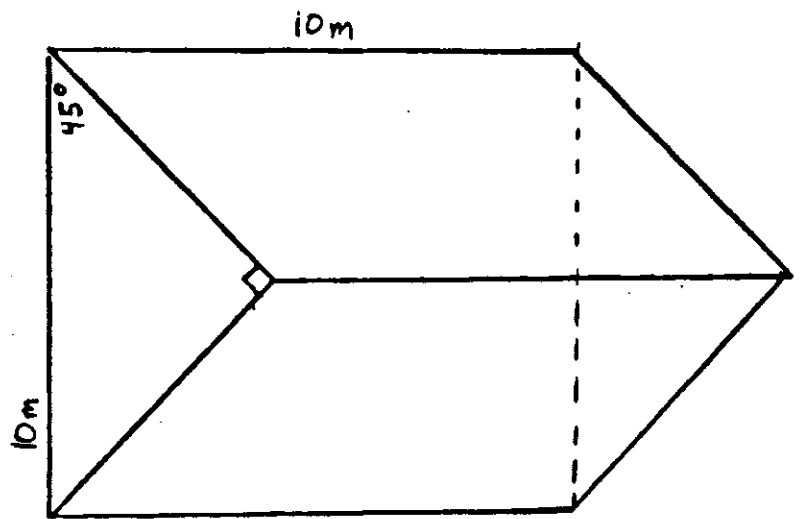
⑧



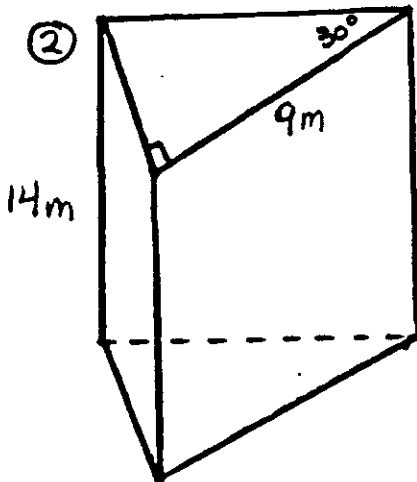
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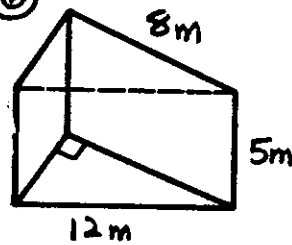
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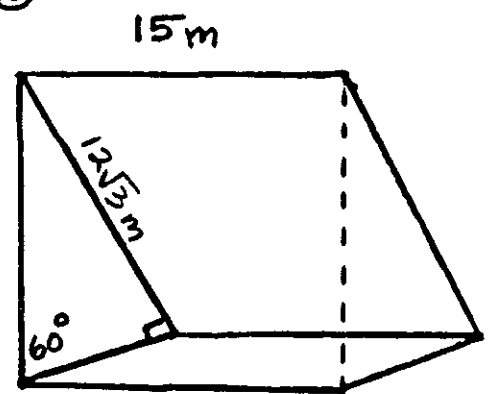
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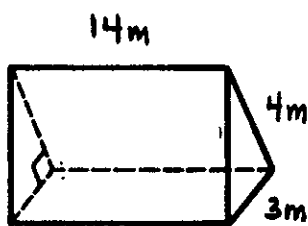
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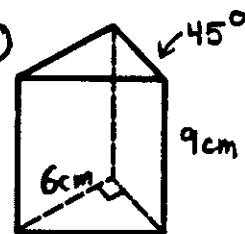
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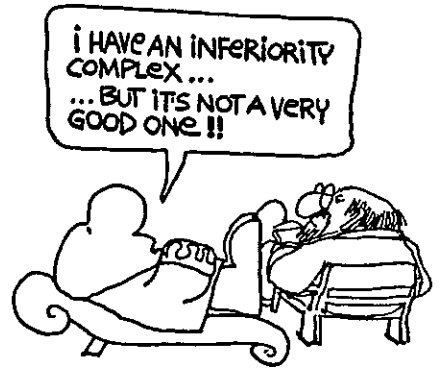
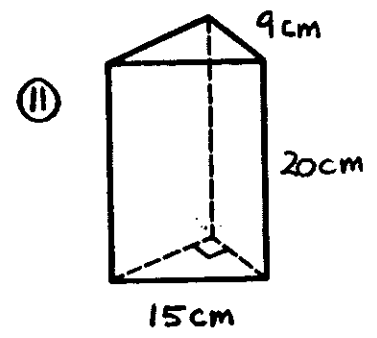
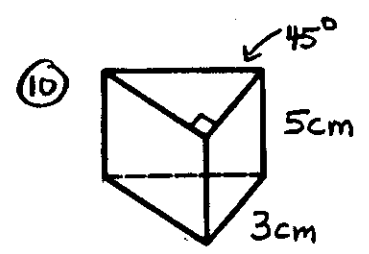
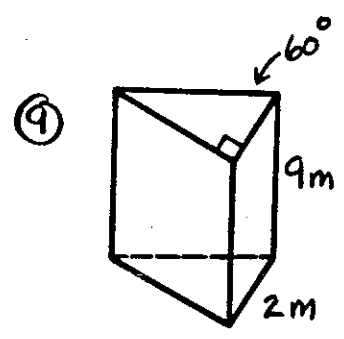
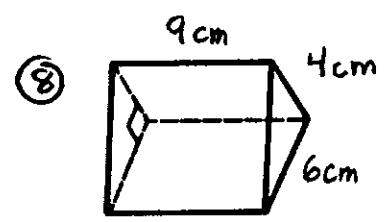
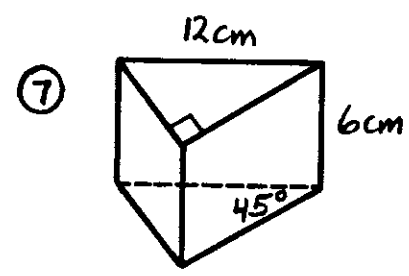
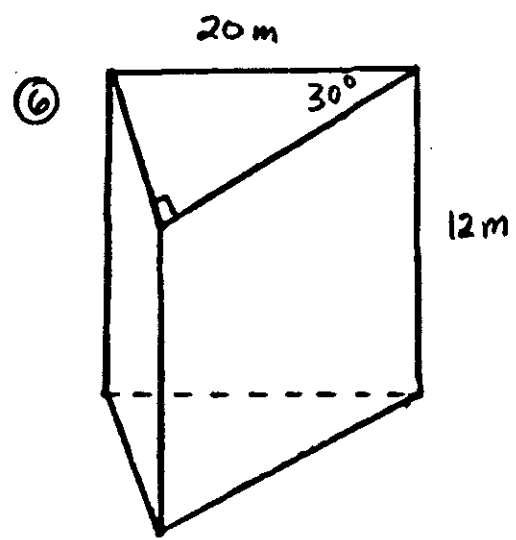
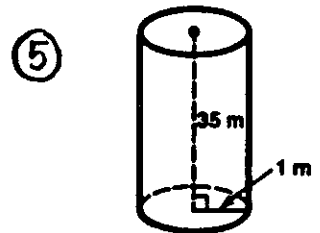
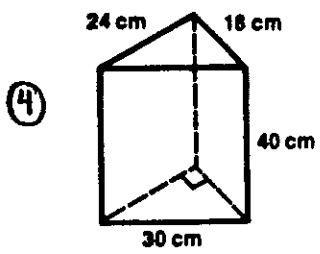
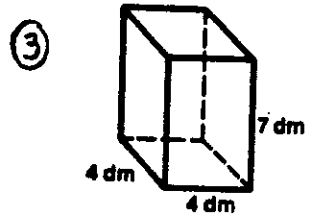
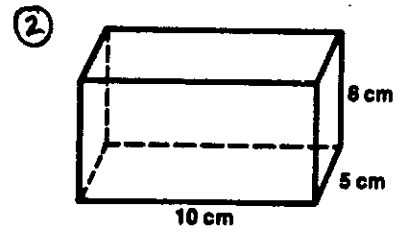
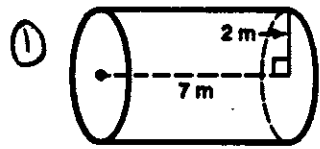
③



⑦



3. REVIEW



QUARTER 3

Cumulative Review

REVIEW #1

What is the value of "3" in:

- ① 452.1234
- ② 250.034
- ③ 41,325.21

Round 645.9972 to the nearest:

- ④ 100
- ⑤ $\frac{1}{100}$
- ⑥ $\frac{1}{10}$

Exponents:

- ⑦ 10^5
- ⑧ 5^3
- ⑨ 6^2

Expand:

- ⑩ 300.25
- ⑪ 2,002.02
- ⑫ 4,400.01

Rename division:

- ⑬ $5\overline{)6}$
 - ⑭ $\frac{3}{5}$
 - ⑮ $2 \div 3$
- Two answers for each

Primes/Composites:

- ⑯ Primes 0-12
- ⑰ Composites 25-32
- ⑱ Primes 35-45

Prime factorization:

- ⑲ 200
- ⑳ 224
- ㉑ 325

GCF / LCM:

- ㉒ GCF of 12, 18
- ㉓ LCM of 12, 8
- ㉔ GCF of 15, 30

Rename fractions:

- ㉕ $\frac{18}{12} = \text{mix. num.}$
- ㉖ $4\frac{3}{7} = \text{imp. frac.}$
- ㉗ $2\frac{6}{4} = \text{mix. num.}$

Comparisons:

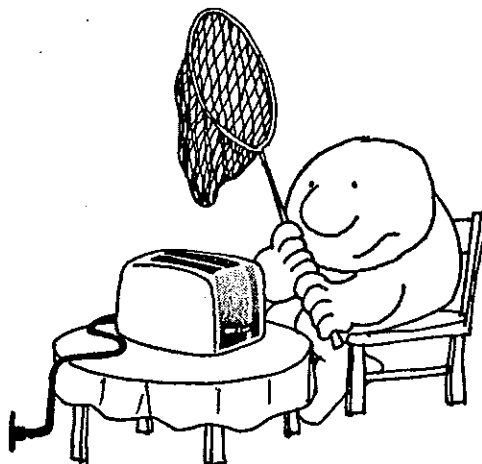
- ㉘ $\frac{3}{4} \square \frac{4}{5}$
- ㉙ $\frac{5}{3} \square 1\frac{3}{5}$
- ㉚ $2\frac{2}{5} \square 1\frac{10}{4}$

Add/Sub. fractions:

- ㉛ $6\frac{3}{8} - 5\frac{3}{5}$
- ㉜ $6\frac{3}{4} + 5\frac{3}{7}$
- ㉝ $4 - 2\frac{2}{7}$

Mult./Div. fractions:

- ㉞ $\frac{15}{24} \times \frac{8}{25}$



- (35) $2\frac{1}{5} \div 4$
 (36) $2\frac{3}{5} \div \frac{39}{40}$

Powers of ten:

- (37) $3.64 \div 10^2$
 (38) 25.2×10^2
 (39) $253 \div 10^4$

Percentages:

- (40) 15% of 35
 (41) 24 is 5% of ___
 (42) 9 is ___% of 27

Equivalence:

- (43) $\frac{2}{3} = \text{dec}, \%$
 (44) $1.5\% = \text{dec}, \text{frac}$
 (45) $.35 = \%, \text{frac}$

Appropriate metric unit to measure:

- (46) weight of a person
 (47) capacity of a punch bowl
 (48) length of a pencil

Metric conversions:

- (49) $3.5 \text{ kg} = \text{--- g}$

- (50) $25 \text{ cm} = \text{--- m}$
 (51) $3200 \text{ ml} = \text{--- l}$

Temp. conversions:

- (52) $20^\circ \text{ F} = \text{---}^\circ \text{ C}$
 (53) $80^\circ \text{ C} = \text{---}^\circ \text{ F}$
 (54) water boils at ___ $^\circ \text{ F}$ ___ $^\circ \text{ C}$

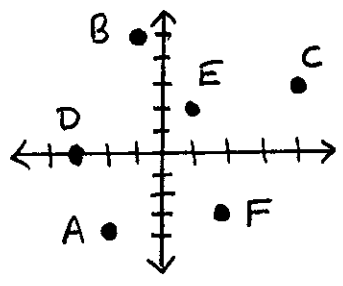
Integers:

- (55) $(6) + (-7) - (-3)$
 (56) $(-4) \div (-1) \times (-2)$
 (57) $(-3) - (-6) + (-2)$

mean, median, mode, range:

- (58) 6, 8, 5, 3, 8
 (59) 2, 3, 9, 8, 2, 8
 (60) 6, 4, 4, 4, 4, 4

Coordinate axis:



- (61) A (,) B (,)
 (62) Quadrant: C, F
 (63) E (,) D (,)

Triangles (A, P):

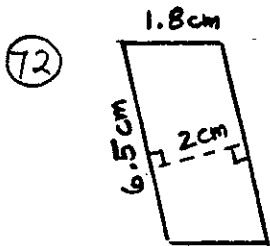
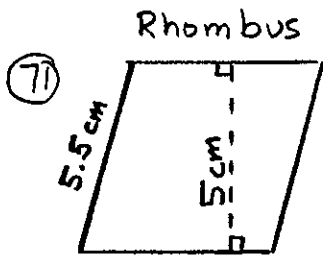
- (64)
- (65)
- (66)

Trapezoids (A, P):

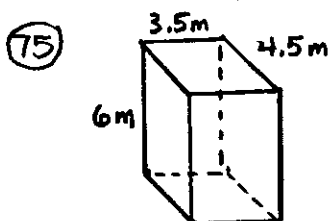
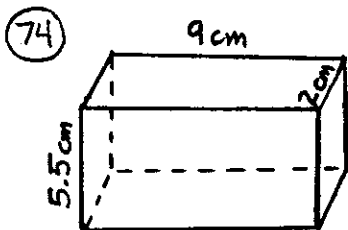
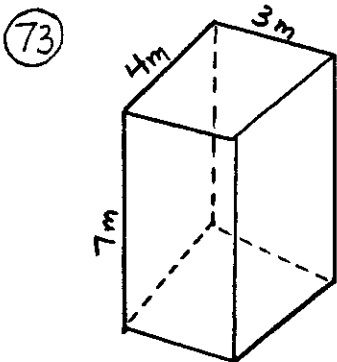
- (67)
- (68)
- (69)

Parallelograms (A, P):

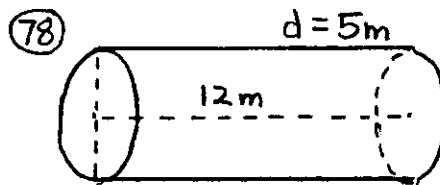
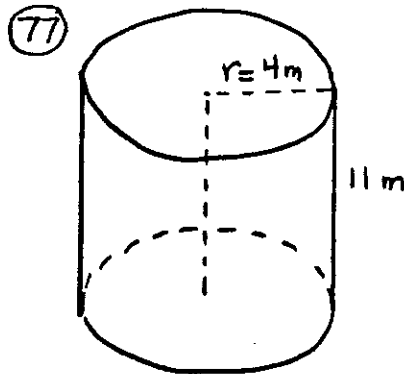
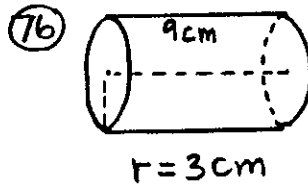
- (70)



Rectangular Prisms (V, SA):



Cylinders (V, SA):



Divisibility
(2, 5, 10, 3, 4, 6, 9):

79 27, 351

80 240

81 111, 000, 111

Complex fractions:

82 $\frac{\left(\frac{1\frac{3}{4}}{2}\right)}{(3)}$

83 $\frac{\left(\frac{3}{5}\right)}{\left(\frac{1\frac{1}{2}}{2}\right)}$

84 $\frac{\left(\frac{2}{\left(\frac{3}{5}\right)}\right)}{(1/5)}$

Order of Operations:

85 $\left[(-2)-(-4)\right]^2 - \frac{(-3)^2}{4^0}$

86 $-3^2 - (-2)^2 \times (-3)$

87 $(-4)^2 - 3^2 \times (-1)^0$

Open, Closed
Equality, Ineq.
(True / False)

88 $a-2 \geq 3(a+4)$

89 $6-2^2 = 10$

90 $2n < 3-4n$

Equations:

91 $6-3(2n-1)=2n$

92 $\frac{3n}{2} - 3n = n-6$

93 $\frac{n}{3} - 2(n-2) = 6$

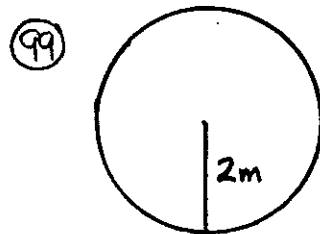
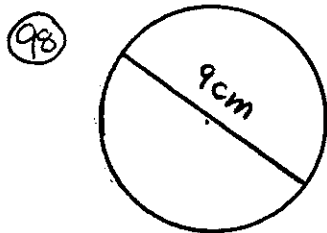
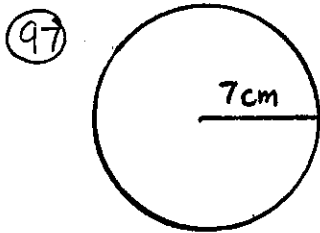
Inequalities:

94 $3-2(n-2) < -3$

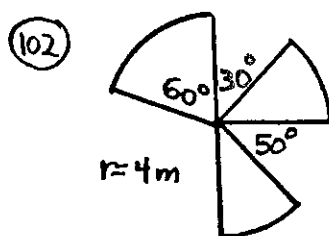
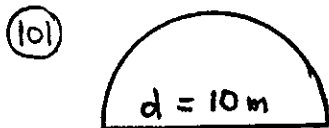
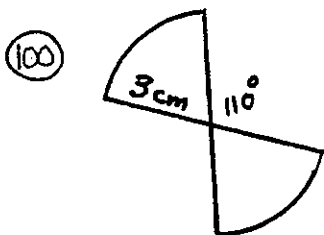
95 $\frac{2n}{3} - 3n \geq n-1$

96 $4 - \frac{n}{2} < 3(n-1)$

Circles (A,C):



Sectors (A,C):



Fraction problems:

103 It takes Alan $\frac{3}{4}$ hours to mow a lawn. How many lawns can he mow in 9 hours?

104 $\frac{4}{5}$ of the house is left to be cleaned. 6 people share the work. How much of the house does each clean?

105 $\frac{2}{3}$ of the work was done on the first day. $\frac{1}{6}$ was done on the second day. How much is left?

Percentage problems:

106 35 items are on sale. This is 10% of the total. How many items are not on sale?

107 In a class of 25 there are 11 girls. What percent are boys?

108 of the 350 players, 25% are in their first year and 9% are in their second year. How many players have been in the league more than two years?

Discount problems:

109 A bicycle originally selling for \$120 is on sale at 8% off. What is the new selling price?

110 A book sells for \$2.40 on sale. The original price was \$3.00. What is the rate of discount?

- ⑪ Discount is \$2.60.
Discount is 20%.
what is the new
selling price?

Evaluating expressions:
 $a = -3$, $b = -1$, $c = -2$

- ⑪② $4a - 2ab^2$
⑪③ $3b(2a - c)$
⑪④ $-2b^3 - 2ac^2$



Simplifying expressions:

- ⑪⑤ $2a(a-1) - 2(a+3a^2)$
⑪⑥ $2ab - 3a(b-1) + 4$
⑪⑦ $a^2 - 2a(a+b) - 3ab$

Change repeating
decimals to fractions:

- ⑪⑧ $.\overline{23}$
⑪⑨ $.\overline{15}$
⑪⑩ $.\overline{021}$

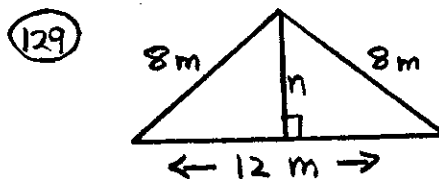
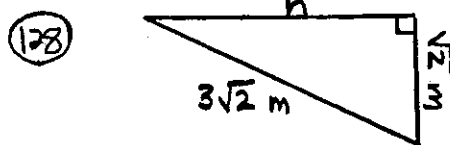
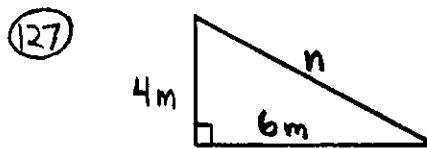
Simplifying radicals:

- ⑫① $\sqrt{180}$ ⑫② $\sqrt{96}$ ⑫③ $\sqrt{72}$

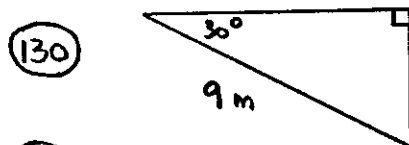
Radical operations (solve, simplify):

- ⑫④ $2\sqrt{6} + 3\sqrt{24}$ ⑫⑥ $3\sqrt{2}(\sqrt{10} + 2\sqrt{2})$
⑫⑤ $(3\sqrt{2})(2\sqrt{6})$

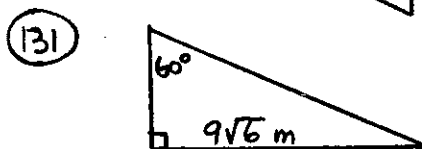
Pythagorean Theorem:



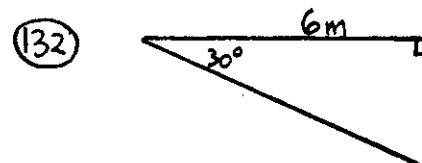
30-60-90 right triangles:



- a) short leg
b) long leg

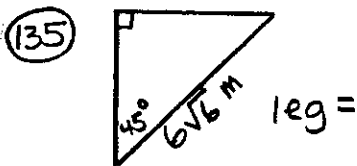
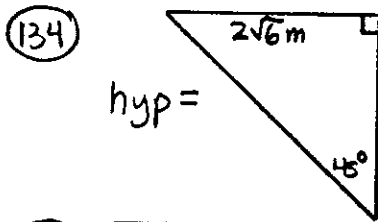
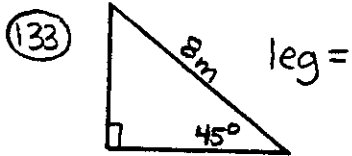


- a) short leg
b) hypotenuse

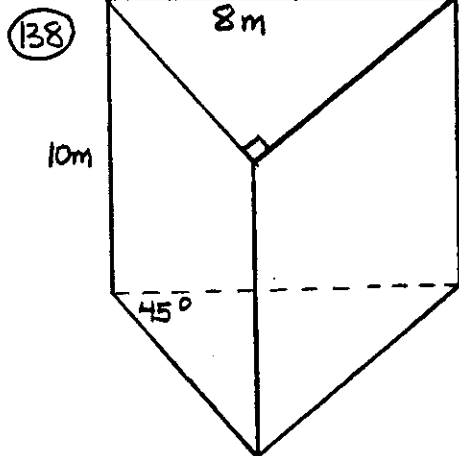
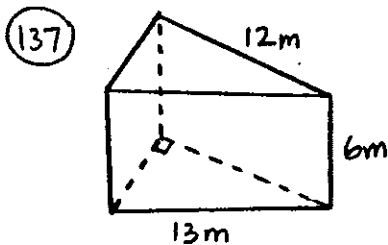
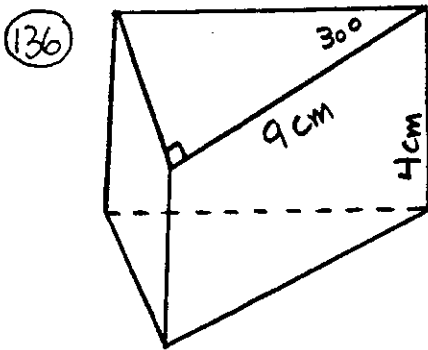


- a) short leg
b) hypotenuse

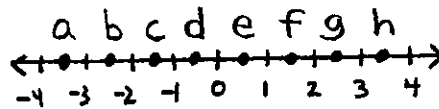
45-45-90 right triangles:



Triangular prisms (V, SA):



Number lines:



(139) $e - g \square d - c$

(140) $e^2 \square e^3$

(141) $-2d \square d^2$

Integer problems:

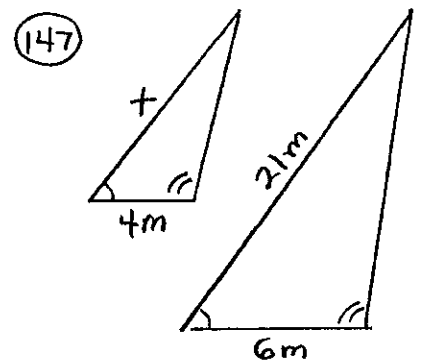
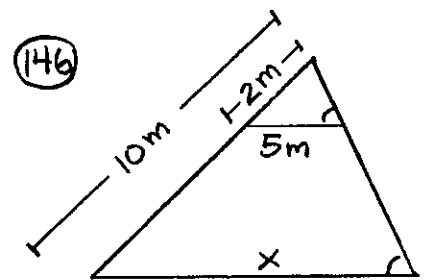
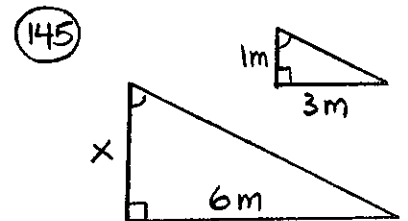
(142) Find the middle of three consecutive odd integers if twice the least is nine less than three times the largest.

(143) Three times a number decreased by two less than twice the number

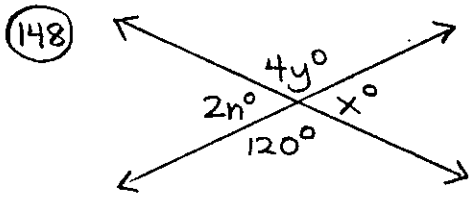
is sixteen. Find the number.

(144) Find the largest of three consecutive integers if two more than the least decreased by twice the middle one is negative three.

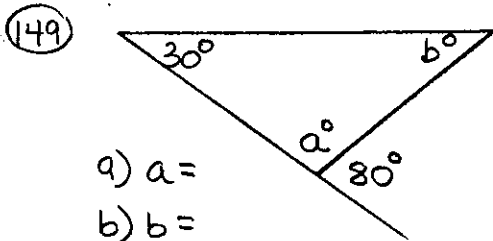
Similar triangles:



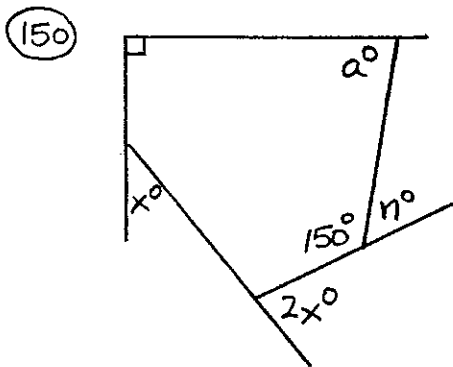
Angle relationships:



a) $y =$ b) $x =$ c) $n =$

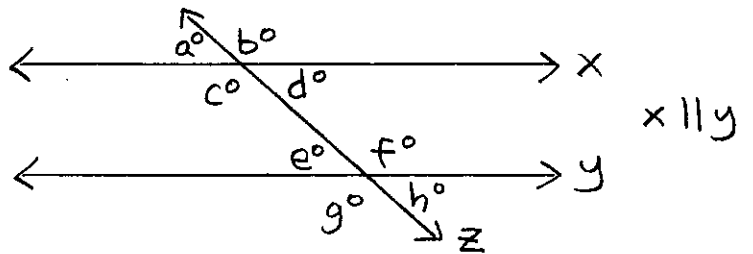


a) $a =$
b) $b =$



If $n = x - 10$, what does $a =$

Parallels / Transversals:



(151) a) Name 4 angles supplementary to $\angle d$
b) Name the angle that corresponds to $\angle b$

(152) a) What angle is vertical to $\angle g$?
b) What term shows $\angle c = \angle f$?

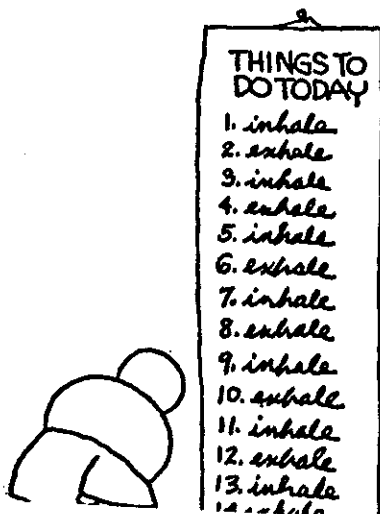
(153) a) If $h = 40$, evaluate $3a - 4c$
b) Name 2 angles that form a linear pair with $\angle b$

Comparative purchasing:
(better buy and per unit costs)

(154) a) 3l for \$2.45
b) 500 ml for \$.55

(155) a) .75 kg for \$3.00
b) 300 g for \$1.20

(156) a) 200 mm for \$3.50
b) 50 cm for \$7.50



PRACTICE TEST

① What is the value of "4" in 38,2346?

② Round 89.9846 to the nearest a) $\frac{1}{10}$ b) 1

③ $4^3 =$

④ Expand 40,003.02

⑤ Rename $5 \div 3$
a) \square b) fraction

⑥ Primes 7-15

⑦ Prime factorization of 240

⑧ Rename: a) $4\frac{2}{3} =$ imp. frac.
b) $18/10 =$ mix. numeral

⑨ $3\frac{1}{3} \square \frac{7}{2}$

⑩ $5\frac{2}{5} - 1\frac{2}{3}$

⑪ $2\frac{3}{4} \div 2\frac{1}{16}$

⑫ Powers of ten: 3.45×10^3

⑬ 2.4 is 4% of what?

⑭ Equivalence: a) $\frac{3}{8} =$ decimal
b) $.8\% =$ fraction

⑮ $2.355 \text{ m} = \underline{\hspace{1cm}} \text{ cm}$

⑯ What metric unit should be used to measure:

- a) height of a tree
b) capacity of a coffee cup

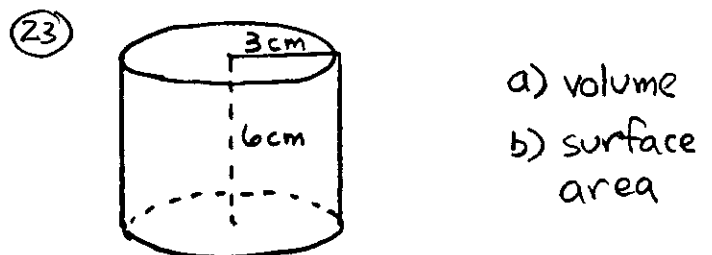
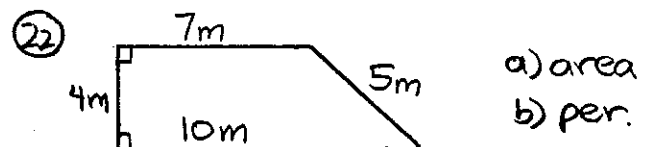
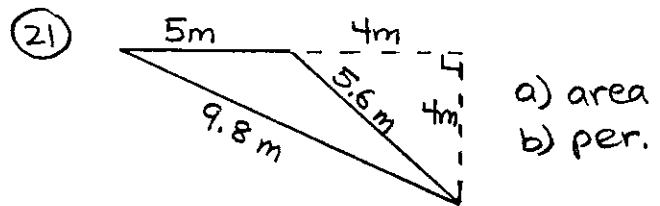
⑰ $15^\circ \text{ F} = \underline{\hspace{1cm}}^\circ \text{ C}$

⑱ $(-8) + (-3) - (-4)$

⑲ Data: 6, 3, 8, 3, 4, 9

- a) mean c) mode
b) median d) range

⑳ In what quadrant is $(-3, -4)$?



㉓ Divisibility (2, 5, 10, 3, 4, 6, 9):
46,545

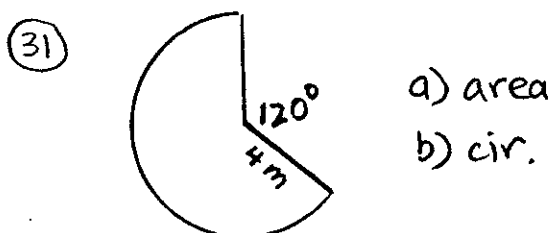
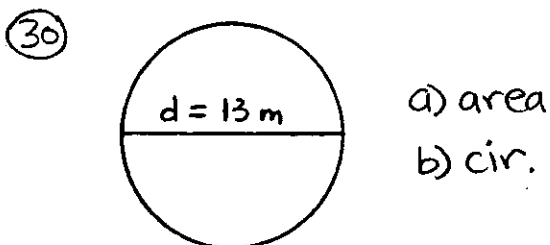
㉔ Simplify this complex fraction: $\frac{\left(\frac{1\frac{1}{3}}{2}\right)}{\left(2\frac{2}{3}\right)}$

26) $-2^2 - (-2)^2 \times (-1)^3$

27) Eq, Ineq / Op, Cl / T, F
 $(-6) - (-2)^3 \leq 2$

28) Solve the equation:
 $\frac{2n}{3} - 2(n-3) = -2$

29) Solve the inequality:
 $3n - 5(2n+1) > n-13$



32) $\frac{3}{4}$ of the children ordered pizza.
 $\frac{2}{3}$ of the orders were pepperoni.
What fraction of the children ordered pepperoni pizza?

33) Ellen was absent 14 days.
This was 8% of the school year.
How many days did she attend school (present, not absent)?

34) A radio was purchased for \$14.
The original price was \$20.
What was the rate of discount?

35) Evaluate for:
 $a = -1, b = -2, c = -3$
 $3b^2 - 4a^2c$

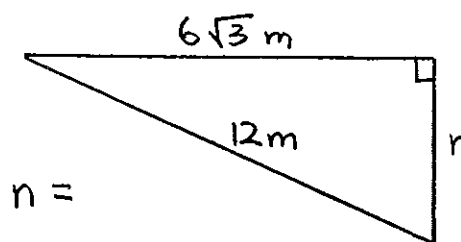
36) Simplify the expression:
 $2a(a-2b) - 3ab + a^2$

37) change $.04\bar{6}$ to a fraction

38) Simplify: $\sqrt{270}$

39) Solve and simplify:
 $2\sqrt{3}(\sqrt{3} - 2\sqrt{12})$

40) Pythagorean Theorem:



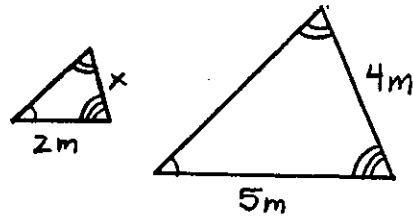
41) Special triangle:



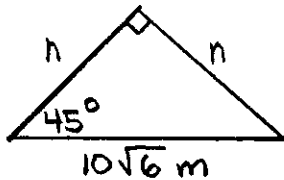
- a) short leg
- b) hypotenuse

smallest is 32,

47) Similar triangles:

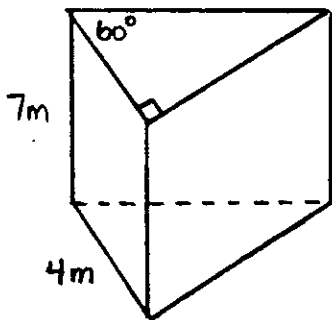


42) Special triangle:



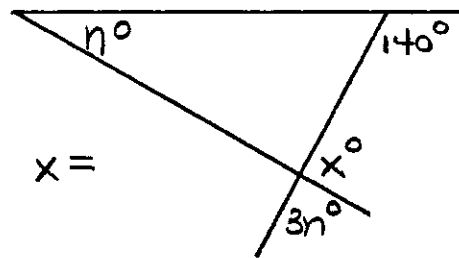
What is the value of n

43)

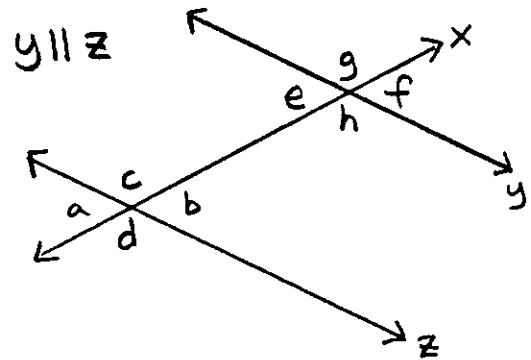


- a) volume
- b) surface area

48) Angle relationships:



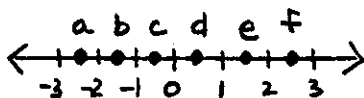
Use the following diagram for questions 49 and 50:



44) Which is the better buy? (and indicate unit prices)

- a) 2500g for \$4.50
- b) 4kg for \$7.75

45) Number line:



- a) $e - c \square a - c$
- b) $d^3 \square d^4$

- 49) a) which \angle is vertical to $\angle e$?
- b) which two \angle 's form a linear pair with $\angle c$?

46) Find the middle of three consecutive odd integers if four times the largest decreased by two less than twice the

- 50) a) which \angle corresponds to $\angle f$?
- b) (T/F) $\angle b$ and $\angle h$ are adjacent angles.

REMEDIATION

① What is the value of "5" in:
24,038,1953 16,503.4927

② Round 699.9837 to
a) 10 c) 1 e) 100
b) $1/10^2$ d) $1/10$ f) 1000

③ $10^7 =$ $3^4 =$

④ Expand:
60,300.002 400,000.0305

⑤ Rename division (two answers)
 $6 \div 7$ $4 \overline{)15}$

⑥ Primes 22-30
Composites 60-66



⑦ Prime factorization:
96 162

⑧ Rename:
 $6\frac{2}{3}$ $4\frac{3}{6}$ $\frac{18}{4}$ $\frac{24}{10}$

⑨ $\frac{8}{3} \square 2\frac{3}{5}$ $4\frac{1}{4} \square \frac{13}{3}$

⑩ $6\frac{2}{3} - 2\frac{7}{8}$ $9 - 1\frac{4}{7}$

⑪ $3\frac{2}{3} \div 2\frac{4}{9}$ $\frac{15}{16} \div 1\frac{7}{8}$

⑫ Powers of ten:
 $346 \div 10^4$ 2.3×10^5

⑬ 4.8 is 12% of what?
12 is what percent of 60?

⑭ Equivalence:
 $4/5 = \text{percent}$ $2.5\% = \text{frac.}$
 $.6\% = \text{fraction}$ $2\frac{1}{2} = \text{percent}$
 $4/9 = \text{decimal}$

⑮ .015 km = ___ cm
1.35 mm = ___ m
45 kg = ___ t

⑯ What metric unit measures:
a) water in a lake
b) width of a TV screen
c) weight of an apple
d) diameter of a nickel

⑰ $8^\circ\text{F} = \text{___}^\circ\text{C}$ $-6^\circ\text{C} = \text{___}^\circ\text{F}$

⑱ $(6) - (-3) \times (-2)$
 $(-2) \times (-1) - (4)$

- ⑱ Mean, median, mode, range:
 Data: 6, 9, 12, 6, 9, 5
 Data: 8, 8, 3, 3, 3, 10

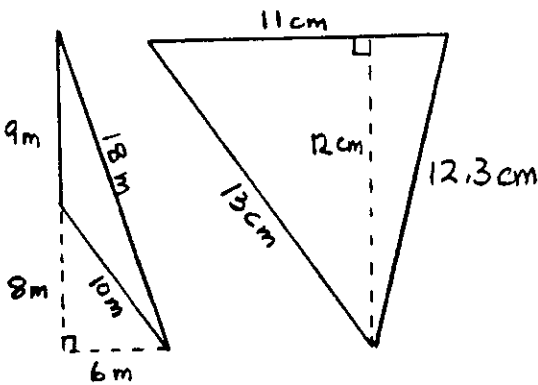
- ⑳ Divisibility (2, 5, 10, 3, 4, 6, 9):
 48, 231 55, 260

- ㉑ In what quadrant?
 (4, -6) (-3, 7)

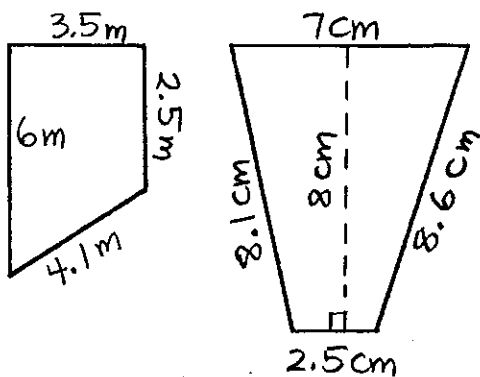
- ㉒ Complex fraction:

$$\frac{\left(\frac{2\frac{1}{2}}{3}\right)}{\left(\frac{3}{\left(\frac{2}{3}\right)}\right)} \quad \frac{\left(1\frac{4}{5}\right)}{\left(\frac{1\frac{1}{3}}{3/4}\right)}$$

- ㉓ Triangle (A, P):



- ㉔ Trapezoid (A, P):



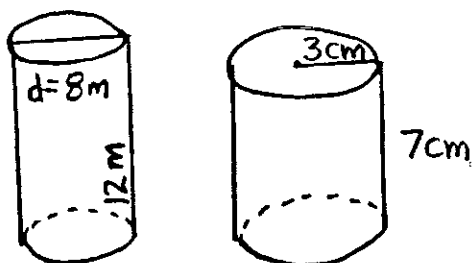
㉕ $-3^2 - (-3)^2 \times (-1)^4 =$
 $(-5)^2 - (-2)^3 \times (-6)^0 =$

- ㉖ Eq, Ineq / Op, Cl / T, F:
 $(-2)^3 - (-2)^2 > -12$
 $2a = 3(a-5)$

- ㉗ Cylinder (V, SA):

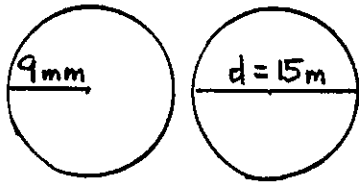
㉘ $\frac{3n}{2} - 4(n-1) = -6$

$\frac{5n}{3} - 2(2n-2) = 18$

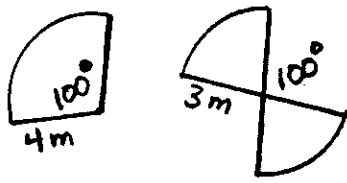


- ㉙ $2x - 3(4x-2) < 10 - 8x$
 $4x - 2(3x-1) \geq 3x + 7$

30) Circles (A,C):



31) Sectors (A,C):



32) $\frac{1}{4}$ of the class did their speeches on the first day. $\frac{3}{7}$ did theirs on the second day. What fraction of the class is left?

$\frac{2}{3}$ of the speeches were about sports. $\frac{1}{5}$ of those were about hockey. What fraction of all the speeches were about hockey?



33) The Cubs lost 14 games during April. This was 70% of their games. How many did they win during April?

On their first road trip, the Cubs won 3 and lost 5. What percent did they win on the trip?

34) Discount \$3.50. Discount 5%. What is the selling price?

Original price \$8. Selling price \$7.40. What is the rate of discount?

35) Evaluate for $x=-2, y=-4$
 $3x^2y - 2xy$ $4x(y^2 - x^2)$

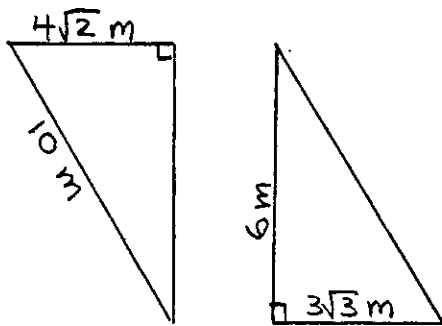
36) Simplify:
 $2a(a-3b) - 2ab - a^2$
 $4(a-1) - 2(2a+1)$

37) Change to fractions:
 $.1\bar{4}$ $.02\bar{6}$

38) Simplify radicals:
 $\sqrt{250}$ $\sqrt{120}$

39) Solve and simplify:
 $\sqrt{3}(2\sqrt{6} - \sqrt{24})$
 $2\sqrt{2}(3\sqrt{2} - \sqrt{8})$

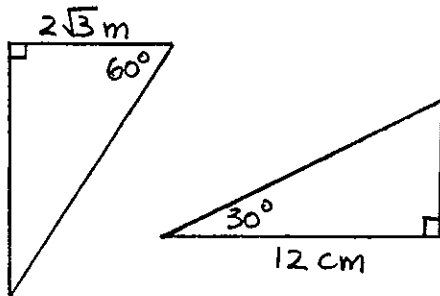
④⑥ Pythagorean Theorem:



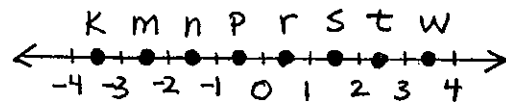
④④ Indicate the better buy and all unit prices:

- a) 600 ml for \$2.20
- b) 2 l for \$7.00
- a) 3.5 m for \$14.25
- b) 700 cm for \$28.50

④① Special triangle:

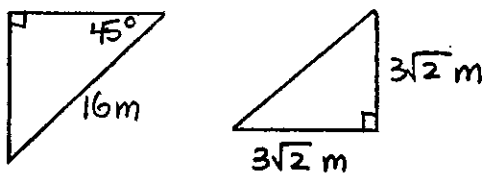


④⑤ Number line:



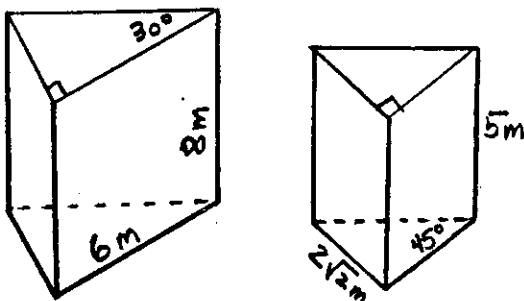
- $p - m \square r - t$
- $p^2 \square p^4$
- $\frac{m}{n} \square \frac{s}{t}$
- $kmn \square npr$

④② Special triangle:



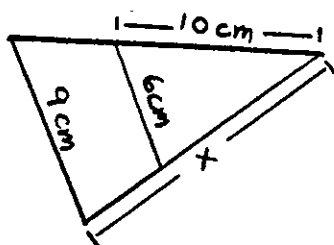
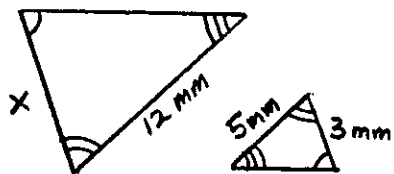
④⑥ Find the largest of three consecutive integers if twice the middle one decreased by four less than three times the smallest is negative three.

④③ Triangular prisms (V, SA)

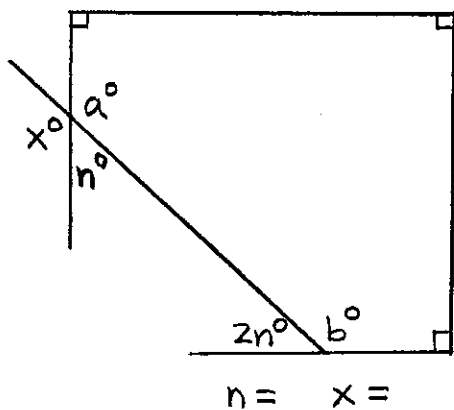
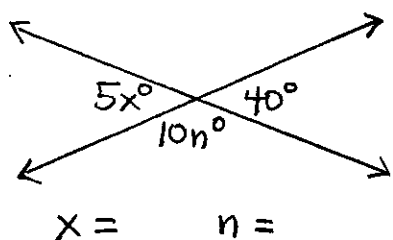


Three times a number decreased by two more than five times the number is equal to negative twelve. Find the number.

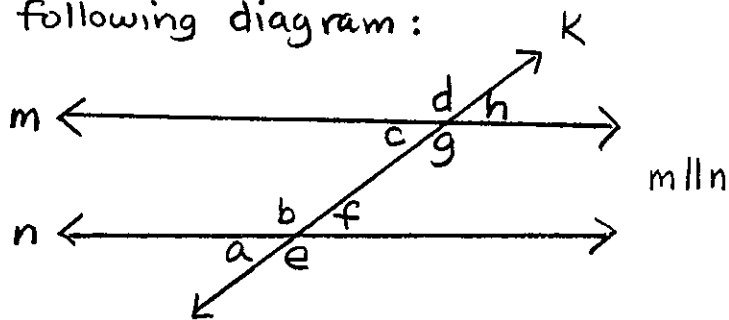
47) Similar triangles:



48) Angle relationships:



Questions 49-50 refer to the following diagram:



- 49) 1) Name an angle vertical to $\angle d$.
- 2) which 2 angles form a linear pair with $\angle f$?
- 3) Name one pair of alternate interior angles.
- 4) If $a = 25$, what is the value of $2h - 3e$?
- 50) 1) which angle corresponds to $\angle c$?
- 2) (T/F) $\angle f$ and $\angle b$ are adjacent angles.
- 3) Name 4 angles supplementary to $\angle g$.
- 4) which line is a transversal?

MATH VOCABULARY (First Three Quarters)

Absolute Value	The positive value of a real number (distance from 0 on a number line)
Acute Angle	Angle measuring greater than 0 and less than 90 degrees
Acute Triangle	A triangle with three acute angles
Addend	A number added to another number
Adjacent Angles	Angles next to each other
Alt. Interior Angles	Angles between two parallel lines on opposite sides of a transversal
Altitude	Perpendicular height of a polygon
Angle	Rotation (measured in degrees) between two rays with a common endpoint
Arc	Section of the circumference of a circle
Area	The number of square units needed to cover a surface
Capacity	The amount that can be held within a container
Celsius	Temperature scale based on water freezing at 0 and boiling at 100 degrees
Central Angle	Angle formed by two radii of a circle
Central Tendency	Statistical measures (mean, median, mode, range)
Chord	Line segment from one point on a circle to another point on the circle
Circle	Simple closed curve with all points an equal distance from the center point
Circumference	The distance around a circle or partial circle
Closed Curve	Curve with a common starting and ending point - no loose ends (can intersect)
Closed Sentence	Equation or inequality with all terms being constants - no variables
Coefficient	A value used as a multiplier for a variable
Complementary Angles	Angles whose measures sum to 90 degrees
Complex Fraction	A fraction containing another fraction in its numerator or denominator
Composite Number	A number with factors other than one and itself
Congruent	Equal in all respects - size, shape, etc.
Constant	A term within an expression that is numerical (no variable)
Coordinate Axis	Perpendicular number lines dividing a plane into four quadrants
Corresponding Angles	Angles that relate to each other by position
Curve	Set of connected points in a plane
Cylinder	Three dimensional figure with two parallel, congruent circles as bases
Data	Set of values
Degree	Unit of measure for angles
Denominator	Bottom value in a fraction (represents the whole in a ratio)
Diameter	Distance between two points on a circle passing through the center point
Difference	Solution to a subtraction problem
Discount	Money subtracted from the original price of an item on sale
Distributive Property	Distributive Property of Multiplication over Addition: $a(b+c)=ab+ac$
Dividend	Number divided by another number (inside bracket, left of sign, numerator)
Divisor	Number that divides into another (outside bracket, right of sign, denominator)
Edge	Line segment at the intersection of two faces in a three dimensional figure
Equation	A number sentence showing two equal expressions
Equiangular Triangle	Triangle with three congruent angles (also equilateral)
Equilateral Triangle	Triangle with three congruent sides (also equiangular)
Equivalent	Having equal measures
Evaluating Expressions	Substituting specified numbers to determine the value of an expression
Even Number	Any number divisible evenly by 2 (has a units digit of 0, 2, 4, 6, or 8)
Exclusive	Not containing or overlapping anything else
Exponent (Power)	Value indicating how many times the base number is used as a factor
Expression	An algebraic value including a term or addition/subtraction of terms
Face	Flat region in a three dimensional figure
Factor	Number that can be divided evenly into another number
Fahrenheit	Temperature scale based on water freezing at 32 and boiling at 212 degrees
Gram	Metric unit of measure for weight
Graphing	Showing a set of solutions on a number line or coordinate axis
Greatest Common Factor	The largest number that divides evenly into two or more given numbers
Heptagon	A seven sided polygon
Hexagon	A six sided polygon
Horizontal	Across (from side to side)
Hypotenuse	The side opposite the right angle in a right triangle
Improper Fraction	Fraction with numerator larger than denominator

Index	Number to upper left of radical sign indicating root to be taken
Inequality	Number sentence showing two expressions separated by an inequality sign
Infinite Decimal	A non-repeating, non-terminating decimal (example: pi, sq root of 2)
Infinity	Concept of boundlessness in time, space, quantity
Integers	Positive and negative counting numbers and zero
Intersection	Point or points in common between geometric figures
Isosceles Triangle	Triangle with two congruent sides
Lateral Face	Plane region of a three dimensional figure (not one of the bases)
Lateral Surface	All of the regions of a three dimensional figure that are not bases
Least Common Multiple	The smallest number that the original numbers can divide into evenly
Legs	Sides adjacent to the right angle in a right triangle
Line	Straight set of connecting points extending to infinity in two directions
Linear Pair	Two adjacent supplementary angles
Line of Symmetry	A line dividing a region into two congruent parts
Line Segment	Section of a line with definite starting and ending points
Liter	Metric unit of measure for capacity
Mean	Average of the data (sum divided by number of items in data)
Median	Middle value in data (avg of two middle values if even number of items)
Meter	Metric unit of measure for length
Minuend	Number from which another is subtracted (top number in subtraction problem)
Mixed Numeral	Value expressed by a whole number and a fraction
Mode	Item occurring most frequently in data
Multiple	Number divisible evenly by the original number
Numerator	Top value in a fraction (represents part of a whole in a ratio)
Obtuse Angle	An angle measuring greater than 90 and less than 180 degrees
Obtuse Triangle	Triangle with one obtuse angle
Octagon	Eight sided polygon
Odd Number	Every other number starting with 1 (has units digit of 1, 3, 5, 7, or 9)
Open Sentence	Equation or inequality containing at least one variable
Order of Operations	Rules that govern order in which calculations are to be done
Ordered Pair	Two values specifying the horizontal and vertical coordinates (x,y)
Origin	The point of intersection (0,0) between the two coordinate axis
Original Price	The beginning price of an item before a discount is subtracted
Parallel Lines	Lines in the same plane that never intersect
Parallelogram	Quadrilateral with two sets of parallel sides
Pentagon	Five sided polygon
Percent	Ratio with 100 as the bottom term (part out of 100)
Perimeter	Distance around a polygon or simple closed curve
Perpendicular Lines	Lines intersecting to form right angles
Pi	Ratio of the circumference of a circle to its diameter (approx. 3.14)
Plane	Flat surface extending to infinity in two dimensions
Point	Location without dimensions
Polygon	A simple closed curve made entirely of line segments
Prime Factorization	Product of prime numbers (in ascending order) producing the original value
Prime Number	A whole number greater than 1 with factors of only 1 and itself
Product	Solution to a multiplication problem
Proportion	Comparison of two ratios
Protractor	Instrument used for measuring angles
Purchase Price	Price of an item after the discount has been subtracted
Pythagorean Theorem	In a right triangle, sum of the legs squared equals the hypotenuse squared
Pythagorean Triples	Sets of three whole numbers that can serve as sides of a right triangle
Quadrant	One of the four regions formed by the coordinate axis
Quadrilateral	Four sided polygon
Quotient	Solution to a division problem
Radical	Symbol for square (or other specified) root - indicates principal root
Radicand	The value under the radical sign
Radius	The distance from the center point to any point on a circle (half the diameter)
Range	The difference between the highest and lowest values in data
Rate of Discount	Percent of the original price deducted to determine the selling price
Ratio	Indicates part of a whole - fractional value
Ray	Section of a line with a definite starting point
Reciprocal	Value which multiplied by the original gives a product of 1 (mult. inverse)
Rectangle	Parallelogram with four right angles

Rectangular Prism	Prism with parallel, congruent rectangles for bases
Regular Polygon	Polygon with all sides and angles congruent
Regular Price	Price of an item before discount is deducted (original price)
Repeating Decimal	Decimal that does not terminate and repeats a pattern of digits to infinity
Rhombus	Parallelogram with all sides congruent
Right Angle	Angle measuring 90 degrees formed by perpendicular lines or segments
Right Triangle	Triangle that includes one right angle
Scalene Triangle	Triangle with no congruent sides
Sector	Section of a circle bounded by two radii and an arc
Selling Price	Price of an item after discount is subtracted (purchase price)
Semi-Circle	Exactly half of a circle
Similar Polygons	Polygons with all measures in direct proportion
Simple Closed Curve	Closed curve that does not intersect itself
Simplifying Expressions	Combining like terms in an algebraic expression
Square	Rectangle with all sides congruent
Straight Angle	Angle measuring 180 degrees
Subtrahend	A number subtracted from another number (bottom number in subtraction)
Sum	Solution to an addition problem
Supplementary Angles	Angles whose measures sum to 180 degrees
Surface Area	Sum of the areas of the faces of a three dimensional geometric figure
Term	Single value or product of coefficients and variables
Terminating Decimal	Decimal value with a definite number of digits
Transversal	Line or section of a line intersecting a set of parallel lines
Trapezoid	Quadrilateral with exactly one set of parallel sides
Triangle	Three sided polygon
Triangular Prism	Prism with two congruent, parallel triangular bases
Undefined Value	Any value that includes a division by zero
Variable	Letters or symbols representing values in an expression
Vertex	Point where an angle is formed (plural is vertices)
Vertical	Up and down, from top to bottom
Vertical Angles	Equal angles formed on opposite sides of intersecting lines
Volume	Measure of the capacity of a three dimensional figure (in cubic units)

