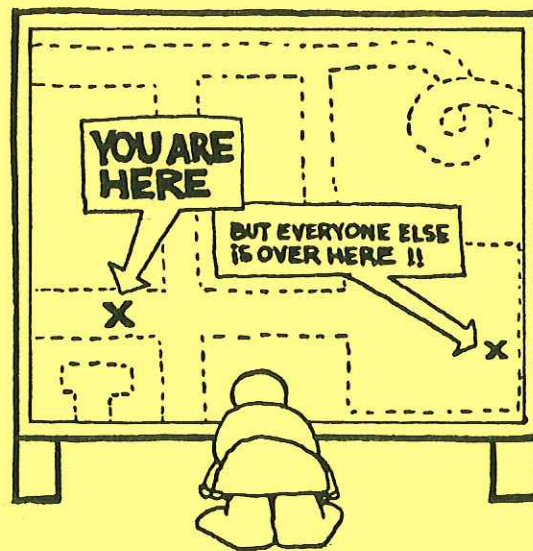


Friendship Junior High School  
Sixth Grade Accelerated Math Program

Room 102A (Mr. Lavine)

2



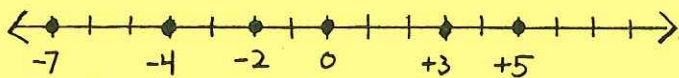
2nd Quarter Units of Study

Introduction to Algebra  
Measurement  
Plane Geometry

# UNIT 5

## Introduction To Algebra

### 1. NUMBER LINE



### 2. COMPARISONS

- ① < ③ < ⑤ < ⑦ >  
 ② < ④ > ⑥ < ⑧ <

### 3. ADDITION & SUBTRACTION

- |  |  |
|--|--|
| ① +1   | ⑩ (+4) - (+8)<br>(+4) + (-8) = $\boxed{-4}$  |
| ② +3   | ⑪ -4   |
| ③ (+3) - (-4)<br>(+3) + (+4) = $\boxed{+7}$  | ⑫ (-3) - (-4)<br>(-3) + (+4) = $\boxed{+1}$  |
| ④ (-7) - (+8)<br>(-7) + (-8) = $\boxed{-15}$ | ⑬ (-3) + (+4) - (-8) - (+2)<br>(-3) + (+4) + (+8) + (-2)<br>(+12) + (-5) = $\boxed{+7}$  |
| ⑤ +16  | ⑭ (+7) - (-8) + (-9) - (+1)<br>(+7) + (+8) + (-9) + (-1)<br>(+15) + (-10) = $\boxed{+5}$ |
| ⑥ (-4) - (-3)<br>(-4) + (+3) = $\boxed{-1}$  | ⑮ (+4) + (-6) - (-6) - (+4)<br>(+4) + (-6) + (+6) + (-4)<br>(+10) + (-10) = $\boxed{0}$  |
| ⑦ (+7) - (+8)<br>(+7) + (-8) = $\boxed{-1}$  |  |
| ⑧ (-6) - (+8)<br>(-6) + (-8) = $\boxed{-14}$ |  |
| ⑨ +4   |  |

### 4. MULTIPLICATION & DIVISION

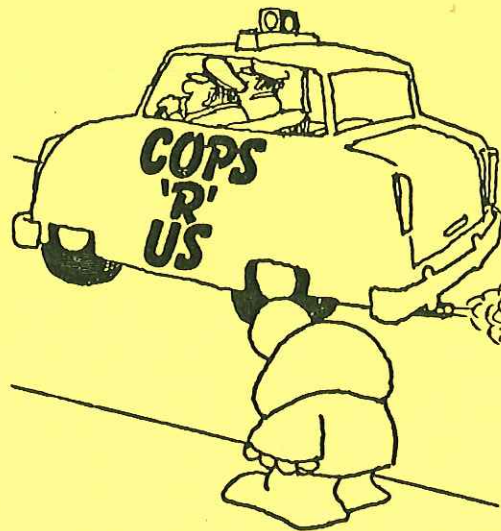
- |       |       |      |      |       |
|-------|-------|------|------|-------|
| ① +18 | ④ -32 | ⑦ +7 | ⑩ -5 | ⑬ -24 |
| ② +24 | ⑤ -63 | ⑧ 0  | ⑪ -6 | ⑭ +18 |
| ③ -24 | ⑥ -3  | ⑨ +1 | ⑫ -1 | ⑮ 0   |

### 5. OPERATIONS

- |  |   |
|--|---|
| ① (+7) - (-5)<br>(+7) + (+5) = $\boxed{+12}$ | ⑥ (+3) - (-5)<br>(+3) + (+5) = $\boxed{+8}$ |
| ② -5   | ⑦ -3  |
| ③ -6   | ⑧ (-2) - (-8)<br>(-2) + (+8) = $\boxed{+6}$ |
| ④ +16  | ⑨ +17                                       |
| ⑤ (-8) - (+7)<br>(-8) + (-7) = $\boxed{-15}$ | ⑩ undefined                                 |

### 6. NUMBER SENTENCES

- |           |           |           |
|-----------|-----------|-----------|
| ① E, O    | ⑦ I, O    | ⑬ I, C, T |
| ② I, C, F | ⑧ I, C, F | ⑭ E, O    |
| ③ I, O    | ⑨ I, O    | ⑮ I, O    |
| ④ E, C, F | ⑩ E, C, T | ⑯ I, C, F |
| ⑤ E, O    | ⑪ I, C, F |           |
| ⑥ I, O    | ⑫ I, O    |           |





## 7. ORDER OF OPERATIONS

- ① 9
- ② -9
- ③ -8
- ④ -8
- ⑤ -125
- ⑥ -25
- ⑦ 25
- ⑧ -1
- ⑨ 1
- ⑩ 2

$$\begin{aligned} \text{⑪ } & -[-(-3)] \\ & -[+3] \\ & \boxed{-3} \end{aligned}$$

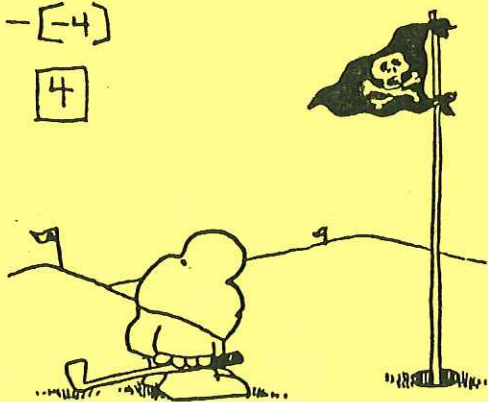
$$\begin{aligned} \text{⑫ } & -[-(-2)^2] \\ & -[-(4)] \\ & -[-4] \\ & \boxed{4} \end{aligned}$$

$$\begin{aligned} \text{⑬ } & -[-(-3)]^2 \\ & -[3]^2 \\ & -[9] \\ & \boxed{-9} \end{aligned}$$

$$\begin{aligned} \text{⑭ } & -[+(-5)] \\ & -[-5] \\ & \boxed{5} \end{aligned}$$

$$\begin{aligned} \text{⑮ } & -(-(-3)) \\ & -(-(+3)) \\ & -(-3) \\ & \boxed{3} \end{aligned}$$

$$\begin{aligned} \text{⑯ } & (-3)+(-2) \times (-1) \\ & (-3)+(+2) \\ & \boxed{-1} \end{aligned}$$



$$\begin{aligned} \text{⑰ } & (-6)-(-2) \div (-2) + (-3) \\ & (-6)-(+1) + (-3) \\ & (-6)+(-1) + (-3) = \boxed{-10} \end{aligned}$$

$$\begin{aligned} \text{⑱ } & (-4) \times (-2) - (-5) \\ & (+8) - (-5) = (+8) + (+5) = \boxed{13} \end{aligned}$$

$$\begin{aligned} \text{⑲ } & (-3)^2 + (-2)^0 \times (-2) \\ & (9) + (1) \times (-2) \\ & (9) + (-2) = \boxed{7} \end{aligned}$$

$$\begin{aligned} \text{⑳ } & -2^2 \times (-3)^2 + (-1) \\ & (-4) \times (+9) + (-1) \\ & (-36) + (-1) = \boxed{-37} \end{aligned}$$

$$\begin{aligned} \text{㉑ } & (-1)^3 - 2^3 \div (-2) - (-1)^0 \\ & (-1) - 8 \div (-2) - (1) \\ & (-1) - (-4) - (1) \\ & (-1) + (4) - (1) = \boxed{2} \end{aligned}$$

$$\begin{aligned} \text{㉒ } & 5^2 - 5^2 - (-5)^2 \\ & (25) - (25) - (25) \\ & \boxed{-25} \end{aligned}$$

$$\begin{aligned} \text{㉓ } & -2^0 + [ -(-2)^2 ] \\ & (-1) + (-4) \\ & -1 + (-4) = \boxed{-5} \end{aligned}$$

$$\begin{aligned} \text{㉔ } & \frac{-5^0 - (-6)}{(-2)^2 - (-1)} \\ & \frac{-1 + (6)}{(4) + (1)} = \boxed{1} \end{aligned}$$

$$\text{㉕ } \frac{-3^2 + (-1)}{-2^2 - (-4)}$$

$$\frac{-9 + (-1)}{-4 + (4)} = \frac{-10}{0}$$

undefined

$$\begin{aligned} \text{㉖ } & \frac{-4 + (-2)^3 + 12}{-3^2 + 4} \\ & \frac{-4 + (-8) + 12}{-9 + 4} \end{aligned}$$

$$\frac{0}{-5} = \boxed{0}$$

## 8. EVALUATING EXPRESSIONS

$$\begin{aligned} \text{① } & a+b \\ & (-2) + (-1) = \boxed{-3} \end{aligned}$$

$$\begin{aligned} \text{② } & ab \\ & (-2)(-1) = \boxed{2} \end{aligned}$$

$$\begin{aligned} \text{③ } & a-c \\ & (-2) - (2) \\ & (-2) + (-2) = \boxed{-4} \end{aligned}$$

$$\begin{aligned} \text{④ } & 2b+c \\ & 2(-1) + (2) \\ & (-2) + (2) = \boxed{0} \end{aligned}$$

$$\begin{aligned} \text{⑤ } & 3a-b \\ & 3(-2) - (-1) \\ & (-6) - (-1) \\ & (-6) + (1) \\ & \boxed{-5} \end{aligned}$$

$$\begin{aligned} \textcircled{6} \quad & 2a - 4c \\ & 2(-2) - 4(2) \\ & (-4) - (8) \\ & (-4) + (-8) = \boxed{-12} \end{aligned}$$

$$\begin{aligned} \textcircled{7} \quad & 2ab - b \\ & 2(-2)(-1) - (-1) \\ & (4) - (-1) \\ & (4) + (1) = \boxed{5} \end{aligned}$$

$$\begin{aligned} \textcircled{8} \quad & 3a^2 - bc \\ & 3(-2)^2 - (-1)(2) \\ & 3(4) - (-1)(2) \\ & (12) - (-2) \\ & (12) + (2) = \boxed{14} \end{aligned}$$

$$\begin{aligned} \textcircled{9} \quad & 3a - 2b^2c \\ & 3(-2) - 2(-1)^2(2) \\ & 3(-2) - 2(1)(2) \\ & (-6) - (4) \\ & (-6) + (-4) = \boxed{-10} \end{aligned}$$

$$\begin{aligned} \textcircled{10} \quad & 2(a-b) \\ & 2((-2) - (-1)) \\ & 2((-2) + (1)) \\ & 2(-1) = \boxed{-2} \end{aligned}$$

$$\begin{aligned} \textcircled{11} \quad & 3c - 2(2a+b) \\ & 3(2) - 2(2(-2) + (-1)) \\ & 3(2) - 2((-4) + (-1)) \\ & 3(2) - 2(-5) \\ & (6) - (-10) = (6) + (10) = \boxed{16} \end{aligned}$$

$$\begin{aligned} \textcircled{12} \quad & 3ac - (a-b) \\ & 3(-2)(2) - ((-2) - (-1)) \\ & 3(-2)(2) - (-1) \\ & (-12) - (-1) \\ & (-12) + (1) = \boxed{-11} \end{aligned}$$

$$\begin{aligned} \textcircled{13} \quad & a^2 - 2a^2 \\ & (-2)^2 - 2(-2)^2 \\ & (4) - 2(4) \\ & (4) - (8) \\ & (4) + (-8) = \boxed{-4} \end{aligned}$$

$$\begin{aligned} \textcircled{14} \quad & b^2 - b^3 \\ & (-1)^2 - (-1)^3 \\ & (1) - (-1) \\ & (1) + (1) = \boxed{2} \end{aligned}$$

$$\begin{aligned} \textcircled{15} \quad & \frac{2a-3b}{a+c} \\ & \frac{2(-2)-3(-1)}{(-2)+(2)} \\ & \frac{(-4)-(-3)}{0} \end{aligned}$$

undefined

$$\begin{aligned} \textcircled{16} \quad & \frac{-4ac - a^2b}{2a} \\ & \frac{-4(-2)(2) - (-2)^2(-1)}{2(-2)} \end{aligned}$$

$$\frac{(16) - (4)(-1)}{(-4)} = \frac{(16) - (-4)}{(-4)}$$

$$\frac{(16) + (4)}{(-4)} = \frac{20}{-4} = \boxed{-5}$$

$$\begin{aligned} \textcircled{17} \quad & (-1)^2 - (-3)^3 \div (-3) \\ & (1) - (-27) \div (-3) \\ & (1) - (9) \\ & (1) + (-9) = \boxed{-8} \end{aligned}$$

$$\begin{aligned} \textcircled{18} \quad & -[-(-3)] - (-1) \\ & -(3) - (-1) \\ & (-3) + (1) = \boxed{-2} \end{aligned}$$

$$\begin{aligned} \textcircled{19} \quad & -2^2 - (-2)^2 \times (-7)^0 \\ & -4 - (4) \times (1) \\ & -4 - (4) \\ & -4 + (-4) = \boxed{-8} \end{aligned}$$

$$\begin{aligned} \textcircled{20} \quad & (-1)^7 - (-1)^4 - (-1)^3 \\ & (-1) - (1) - (-1) \\ & (-1) + (-1) + (1) = \boxed{-1} \end{aligned}$$

### 9. SIMPLIFYING EXP

$$\textcircled{1} \quad 3a + 2b - 5a + 7b$$

$$-2a + 9b$$

$$\textcircled{2} \quad x - 3y + 5 - 2y - 1$$

$$x - 5y + 4$$

$$\textcircled{3} \quad n - 3m - 2n + 4$$

$$-n - 3m + 4$$



$$\textcircled{4} \begin{array}{l} a + 4b - 3a + 2a - 1 \\ 4b - 1 \end{array}$$

$$\textcircled{5} 2(a+b) = 2a+2b$$

$$\textcircled{6} \begin{array}{l} 3(x-y) + 2x \\ 3x - 3y + 2x \\ 5x - 3y \end{array}$$

$$\textcircled{7} \begin{array}{l} 2a + 3ab - 3a + ab \\ -a + 4ab \end{array}$$

$$\textcircled{8} \begin{array}{l} 4a - 2(a+2b) \\ 4a - 2a - 4b \\ 2a - 4b \end{array}$$

$$\textcircled{9} \begin{array}{l} 3 - 4(a-1) + 2a \\ 3 - 4a + 4 + 2a \\ 7 - 2a \end{array}$$

$$\textcircled{10} \begin{array}{l} 2a - 3a(b+2) - ab \\ 2a - 3ab - 6a - ab \\ -4a - 4ab \end{array}$$

$$\textcircled{11} \begin{array}{l} 2x - 3x(2-y) - x \\ 2x - 6x + 3xy - x \\ -5x + 3xy \end{array}$$

$$\textcircled{12} \begin{array}{l} 2x(x+3) \\ 2x^2 + 6x \end{array}$$

$$\textcircled{13} \begin{array}{l} 3(a+b) + 2a(a+1) \\ 3a + 3b + 2a^2 + 2a \\ 5a + 3b + 2a^2 \end{array}$$

$$\textcircled{14} \begin{array}{l} 4x(2x-3y) + 2xy \\ 8x^2 - 12xy + 2xy \\ 8x^2 - 10xy \end{array}$$

$$\textcircled{15} \begin{array}{l} 3x^2 - x(2x+1) \\ 3x^2 - 2x^2 - x \\ x^2 - x \end{array}$$

$$\textcircled{16} \begin{array}{l} a^2 - 2a(3a+b) - ab \\ a^2 - 6a^2 - 2ab - ab \\ -5a^2 - 3ab \end{array}$$

$$\textcircled{17} \begin{array}{l} 3xy - 2z \\ 3(-1)(3) - 2(-2) \\ (-9) - (-4) \\ (-9) + (4) = \boxed{-5} \end{array}$$

$$\textcircled{18} \begin{array}{l} 4x^2 - 2y + z^3 \\ 4(-1)^2 - 2(3) + (-2)^3 \\ 4(1) - 2(3) + (-8) \\ (4) - (6) + (-8) \\ (4) + (-6) + (-8) = \boxed{-10} \end{array}$$

$$\textcircled{19} \begin{array}{l} x^2yz - xy \\ (-1)^2(3)(-2) - (-1)(3) \\ (1)(3)(-2) - (-1)(3) \\ (-6) - (-3) \\ (-6) + (3) = \boxed{-3} \end{array}$$

$$\textcircled{20} \begin{array}{l} 2(x-y) - xz \\ 2((-1)-(3)) - (-1)(-2) \\ 2((-1)+(-3)) - (-1)(-2) \\ 2(-4) - (2) \\ (-8) + (-2) = \boxed{-10} \end{array}$$

$$\textcircled{21} -2^3 = \boxed{-8}$$

$$\textcircled{22} (-2)^3 = \boxed{-8}$$

$$\textcircled{23} (-2)^4 = \boxed{16}$$

$$\textcircled{24} -2^0 = \boxed{-1}$$

$$\textcircled{25} (-2)^0 = \boxed{1}$$

$$\textcircled{26} -(-2)^2 = \boxed{-4}$$

## 10. MORE PRACTICE

$$\textcircled{1} \begin{array}{l} -[-(-3)]^2 - (-1) \\ -[3]^2 + (1) \\ -[9] + (1) = \boxed{-8} \end{array}$$

$$\textcircled{2} \begin{array}{l} (-3) - (-2)^2 \times (-1)^3 \\ (-3) - (4) \times (-1) \\ (-3) - (-4) \\ (-3) + (4) = \boxed{1} \end{array}$$

$$\textcircled{3} \begin{array}{l} a - 2ab \\ (-1) - 2(-1)(-3) \\ (-1) - (6) \\ (-1) + (-6) = \boxed{-7} \end{array}$$

$$\textcircled{4} \begin{array}{l} 3a^2 - 2ac^2 \\ 3(-1)^2 - 2(-1)(-2)^2 \\ 3(1) - 2(-1)(4) \\ (3) - (-8) \\ (3) + (8) = \boxed{11} \end{array}$$

$$\textcircled{5} \frac{2a^2 + c}{3b} = \frac{2(-1)^2 + (-2)}{3(-3)} = \frac{2(1) + (-2)}{(-9)} = \frac{(2) + (-2)}{-9} = \frac{0}{9} = \boxed{0}$$

$$\begin{aligned} \textcircled{6} \quad & 2(a+b) - 3b + 3 \\ & 2a + 2b - 3b + 3 \\ & 2a - b + 3 \end{aligned}$$

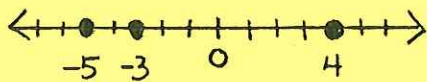
$$\begin{aligned} \textcircled{7} \quad & 2x^2 - x(3-x) \\ & 2x^2 - 3x + x^2 \\ & 3x^2 - 3x \end{aligned}$$

$$\begin{aligned} \textcircled{8} \quad & 4 - 3(a-1) + a \\ & 4 - 3a + 3 + a \\ & 7 - 2a \end{aligned}$$

$$\begin{aligned} \textcircled{9} \quad & 2x - 2x(3x+y) - xy \\ & 2x - 6x^2 - 2xy - xy \\ & 2x - 6x^2 - 3xy \end{aligned}$$

$$\begin{aligned} \textcircled{10} \quad & 4x^2 - 2x(2x+y) + 2xy \\ & 4x^2 - 4x^2 - 2xy + 2xy \\ & 0 \end{aligned}$$

### 11. REVIEW



- |                        |                                |
|------------------------|--------------------------------|
| $\textcircled{4} >$    | $\textcircled{12} (-3) - (-2)$ |
| $\textcircled{5} >$    | $(-3) + (2) = -1$              |
| $\textcircled{6} <$    | $\textcircled{13}$ undefined   |
| $\textcircled{7} >$    | $\textcircled{14}$ 1           |
| $\textcircled{8}$ -14  | $\textcircled{15}$ -12         |
| $\textcircled{9}$ -1   | $\textcircled{16}$ I, O        |
| $\textcircled{10}$ 14  | $\textcircled{17}$ E, O        |
| $\textcircled{11}$ -14 | $\textcircled{18}$ I, C, F     |



$$\begin{aligned} \textcircled{29} \quad & (-2)^3 - (-2)^4 \\ & (-8) - (16) \\ & (-8) + (-16) = \boxed{-24} \end{aligned}$$

$$\begin{aligned} \textcircled{30} \quad & \frac{(-3) - (-2)}{(-4)^0 - (-1)^3} \\ & \frac{(-3) + (2)}{(1) + (-1)} = \frac{-1}{0} \\ & \boxed{\text{undefined}} \end{aligned}$$

$$\begin{aligned} \textcircled{31} \quad & 2x + y \\ & 2(-2) + (-1) \\ & (-4) + (-1) = \boxed{-5} \end{aligned}$$

$$\begin{aligned} \textcircled{32} \quad & 3x - z \\ & 3(-2) - (3) \\ & (-6) + (-3) = \boxed{-9} \end{aligned}$$

$$\begin{aligned} \textcircled{33} \quad & y + 2z \\ & (-1) + 2(3) \\ & (-1) + (6) = \boxed{5} \end{aligned}$$

$$\begin{aligned} \textcircled{34} \quad & 2x - 3x^2y \\ & 2(-2) - 3(-2)^2(-1) \\ & 2(-2) - 3(4)(-1) \\ & (-4) - (-12) \\ & (-4) + (12) = \boxed{8} \end{aligned}$$

$$\begin{aligned} \textcircled{35} \quad & x^2 - y^2 \\ & (-2)^2 - (-1)^2 \\ & (4) - (1) \\ & (4) + (-1) = \boxed{3} \end{aligned}$$

$$\textcircled{19} \text{ E, C, T}$$

$$\textcircled{20} \text{ I, O}$$

$$\textcircled{21} -3^3 = -27$$

$$\textcircled{22} (-3)^2 = 9$$

$$\textcircled{23} -(-3)^2 = -(9) = \boxed{-9}$$

$$\begin{aligned} \textcircled{24} \quad & -[-(-3)] \\ & -[3] = \boxed{-3} \end{aligned}$$

$$\textcircled{25} -3^0 = \boxed{-1}$$

$$\begin{aligned} \textcircled{26} \quad & (-3) \times (-2) - (-1) \times (-2) \\ & (6) - (2) \\ & (6) + (-2) = \boxed{4} \end{aligned}$$

$$\begin{aligned} \textcircled{27} \quad & (-1)^2 - (-3) \div (1) - (-2) \\ & (1) - (-3) \div (1) - (-2) \\ & (1) - (-3) - (-2) \\ & (1) + (3) + (2) = \boxed{6} \end{aligned}$$

$$\begin{aligned} \textcircled{28} \quad & \frac{(-4)^2 - (-2)^4}{-3^2} \\ & \frac{(16) - (16)}{-9} = \frac{0}{-9} = \boxed{0} \end{aligned}$$



$$\begin{aligned} 36) \quad & 2y - 3y^2 \\ & 2(-1) - 3(-1)^2 \\ & 2(-1) - 3(1) \\ & (-2) - (3) \\ & (-2) + (-3) = \boxed{-5} \end{aligned}$$

$$\begin{aligned} 37) \quad & x - (2x + y) \\ & (-2) - (2(-2) + (-1)) \\ & (-2) - ((-4) + (-1)) \\ & (-2) - (-5) \\ & (-2) + (5) = \boxed{3} \end{aligned}$$

$$\begin{aligned} 38) \quad & 3xy^2 \\ & (3)(-2)(-1)(3) \\ & \boxed{18} \end{aligned}$$

$$\begin{aligned} 39) \quad & \frac{2x - y}{x^2} \\ & \frac{2(-2) - (-1)}{(-2)(3)} \\ & \frac{(-4) - (-1)}{(-6)} \\ & \frac{(-4) + (1)}{(-6)} \\ & \frac{-3}{-6} = \boxed{\frac{1}{2}} \end{aligned}$$

$$\begin{aligned} 40) \quad & x - x^2 - x^3 \\ & (-2) - (-2)^2 - (-2)^3 \\ & (-2) - (4) - (-8) \\ & (-2) + (-4) + (8) \\ & \boxed{2} \end{aligned}$$

$$\begin{aligned} 41) \quad & 3a - 2b - 4a + 3b \\ & -a + b \end{aligned}$$

$$\begin{aligned} 42) \quad & 4x - 3 - 2x - 5 \\ & 2x - 8 \end{aligned}$$

$$\begin{aligned} 43) \quad & 3x^2 - 2x + 2x^2 + 5x \\ & 5x^2 + 3x \end{aligned}$$

$$\begin{aligned} 44) \quad & 2(a + 2b) \\ & 2a + 4b \end{aligned}$$

$$\begin{aligned} 45) \quad & 3a - 2(a + 1) \\ & 3a - 2a - 2 \\ & a - 2 \end{aligned}$$

$$\begin{aligned} 46) \quad & 2x^2 - x(x + y) \\ & 2x^2 - x^2 - xy \\ & x^2 - xy \end{aligned}$$

$$\begin{aligned} 47) \quad & 3a - 2a(3 - 3a) \\ & 3a - 6a + 6a^2 \\ & -3a + 6a^2 \end{aligned}$$

$$\begin{aligned} 48) \quad & 4 - 2a(b + 3) + 3ab \\ & 4 - 2ab - 6a + 3ab \\ & 4 + ab - 6a \end{aligned}$$

$$\begin{aligned} 49) \quad & a(a + b) - b(2a + 2) \\ & a^2 + ab - 2ab - 2b \\ & a^2 - ab - 2b \end{aligned}$$

$$\begin{aligned} 50) \quad & x^2 - 2x(x + 1) - x \\ & x^2 - 2x^2 - 2x - x \\ & -x^2 - 3x \end{aligned}$$



## UNIT 6

# Measurement

### 1. METRIC LENGTH

- ① cm    ⑧ cm    ⑮ m  
 ② m    ⑨ m    ⑯ b) 45m  
 ③ km    ⑩ km    ⑰ a) 10mm  
 ④ cm    ⑪ mm    ⑱ b) 28cm  
 ⑤ cm    ⑫ cm    ⑲ b) 1390km  
 ⑥ m    ⑬ mm    ⑳ a) 1mm  
 ⑦ mm    ⑭ km

### 2. METRIC WEIGHT

- ① t    ⑧ mg    ⑮ b) 750g  
 ② mg    ⑨ g    ⑯ b) 210g  
 ③ t    ⑩ g    ⑰ a) 250mg  
 ④ kg    ⑪ kg    ⑱ c) 190kg  
 ⑤ mg    ⑫ g    ⑲ c) 136t  
 ⑥ g    ⑬ kg    ⑳ a) 1kg  
 ⑦ t    ⑭ mg

### 3. METRIC CAPACITY

- ① ml    ⑥ l    ⑪ a) 240 ml  
 ② l    ⑦ ml    ⑫ b) 8 l  
 ③ l    ⑧ kl    ⑬ a) 960 ml  
 ④ kl    ⑨ ml    ⑭ b) 2 l  
 ⑤ ml    ⑩ l    ⑮ b) 160 l

### 4. CONVERSIONS

- ① 54,000 ml    ④ .8 kg  
 ② 5,200 g    ⑤ 141 mm  
 ③ 141 mm    ⑥ 560,000 ml

- ⑦ .084 m    ⑰ 25.7 mm  
 ⑧ 2340 l    ⑱ 1,900,000 l  
 ⑨ 5000 cm    ⑲ 2350 mm  
 ⑩ .5 g    ⑳ .0205 kg  
 ⑪ .00001853 km    ㉑ 5600 cm  
 ⑫ 1.72 cm    ㉒ .000205 t  
 ⑬ .02 km    ㉓ .00238 l  
 ⑭ 2,300 ml    ㉔ 58.76 m  
 ⑮ .057 kg    ㉕ 45,000 ml  
 ⑯ 130 kg

### 5. TEMPERATURE

- ①  $100^{\circ}\text{C}, 212^{\circ}\text{F}$   
 ②  $0^{\circ}\text{C}, 32^{\circ}\text{F}$   
 ③  $37^{\circ}\text{C}, 98.6^{\circ}\text{F}$   
 ④  $(38-32) \div 1.8 = 3.\bar{3}^{\circ}\text{C}$   
 ⑤  $64 \times 1.8 + 32 = 147.2^{\circ}\text{F}$   
 ⑥  $(20-32) \div 1.8 = -6.\bar{6}^{\circ}\text{C}$   
 ⑦  $8 \times 1.8 + 32 = 46.4^{\circ}\text{F}$   
 ⑧  $(155-32) \div 1.8 = 68.\bar{3}^{\circ}\text{C}$   
 ⑨  $-12 \times 1.8 + 32 = 10.4^{\circ}\text{F}$   
 ⑩  $(-5-32) \div 1.8 = -20.\bar{5}^{\circ}\text{C}$   
 ⑪  $50 \times 1.8 + 32 = 122^{\circ}\text{F}$   
 ⑫  $(-10-32) \div 1.8 = -23.\bar{3}^{\circ}\text{C}$   
 ⑬  $-20 \times 1.8 + 32 = -4^{\circ}\text{F}$   
 ⑭  $(90-32) \div 1.8 = 32.\bar{2}^{\circ}\text{C}$   
 ⑮  $(10-32) \div 1.8 = -12.\bar{2}^{\circ}\text{C}$

### 6. COMP PURCH

- ① a) \$1.63/l  
 b) \$1.69/l  
 ② a) \$.70/kg  
 b) \$.92/kg  
 ③ a) 400g = .4kg  
 \$3.75/kg  
 b) \$3.00/kg  
 ④ a) \$1.56/m  
 b) 250cm = 2.5m  
 \$1.60/m  
 ⑤ a) 77mm = .077m  
 \$10.26/m  
 b) \$9.38/m  
 ⑥ a) 150g = .15kg  
 \$14.67/kg  
 b) \$9.28/kg  
 ⑦ a) \$.05/cm  
 b) 250mm = 25cm  
 \$.06/cm  
 ⑧ a) \$11.52/kg  
 b) 300g = .3kg  
 \$10.33/kg  
 ⑨ a) \$.18/cm  
 b) 300mm = 30cm  
 \$.20/cm  
 ⑩ a) \$.57/l  
 b) 500ml = .5l  
 \$.70/l

(7)



⑪ a \$ 3.28/kg  
 b 700g = .7kg  
 \$5.71/kg

⑫ a 800cm = 8m  
 \$4.75/m  
 b \$4.83/m

⑬ a \$1.62/kg  
 b 1500g = 1.5kg  
 \$1.27/kg

⑭ a 1200mm = 1.2m  
 \$3.75/m  
 b \$3.75/m

⑮ a 9l = .009kl  
 \$955.56/kl  
 b \$900/kl

⑧ I hope you didn't add this!  
 $2\frac{7}{8}, 2\frac{7}{8}, \text{none}, 0$

⑨ 4.2083, 4.0625, 3.5,  
 2.25

⑩ 4.47, 4, 2.3 and 8, 6

⑪ 4.83, 4.2, 3.6, 5.5

⑫ .122, .135, .135 and  
 .045, .205

⑬  $-1\frac{2}{3}, -3\frac{1}{2}, -5, 12$

⑭  $-5\frac{3}{4}, -7\frac{1}{2}, 0$  and  $-12,$   
 16

⑮  $-3\frac{1}{7}, -4, -6, 11$

⑯  $-1\frac{1}{2}, -7, -7$  and  $-8,$   
 31

- ⑤ III ⑥ II ⑦ III ⑧ I ⑨ None  
 ⑩ x-axis ⑪ y-axis ⑫ origin

**9. REVIEW**

- ① kg ⑦ b) 4L ⑬ 25,000g  
 ② l ⑧ b) 233g ⑭ .00413m  
 ③ km ⑨ a) 150cm ⑮ 800mm  
 ④ mm ⑩ a) 10kg ⑯ .025kl  
 ⑤ mg ⑪ 1300cm ⑰ .04kg  
 ⑥ ml ⑫ 1680g ⑱ .57t

⑲ 52mm □ 5.7cm  
 5.2cm < 5.7cm

⑳ 200l □ .2kl  
 .2kl = .2kl

㉑ 95cm □ 9.5m  
 .95m < 9.5m

㉒ 4.5kg □ .0045t  
 .0045t = .0045t

㉓ 3500mg □ 35g  
 3.5g < 35g

㉔ 100°C 212°F ㉙  $(33-32) \div 1.8$   
 $.5^\circ\text{C}$

㉕ 0°C 32°F ㉚  $(20-32) \div 1.8$   
 $-6.\bar{6}^\circ\text{C}$

㉖ 37°C 98.6°F ㉛  $(-6) \times 1.8 + 32$   
 21.2°F

㉗  $15 \times 1.8 + 32$  59°F ㉜  $0 \times 1.8 + 32$   
 32°F

㉘  $(75-32) \div 1.8$   
 $23.\bar{8}^\circ\text{C}$

(8)

**7. CENTRAL TENDENCY**

Each answer in order: mean, median, mode, range

① 7, 8, 8, 8

②  $5.\bar{3}, 5, 2$  and  $5,$   
 8

③ 17, 16.5, none, 16

④ 8, 9, 9, 3

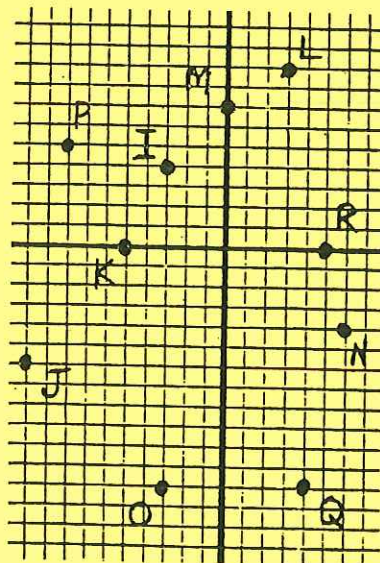
⑤ 3,  $2\frac{1}{2}, 2$  and  $2\frac{1}{2},$   
 $2\frac{1}{2}$

⑥  $4\frac{4}{5}, 5\frac{1}{3}, \text{none}, 3\frac{5}{6}$

⑦  $4\frac{1}{2}, 3\frac{4}{5}, 3\frac{4}{5}, 3\frac{1}{2}$

**8. COORDINATE GRAPHING**

- A (-8, +3) E (-3, +10)  
 B (+5, +8) F (+7, +2)  
 C (-2, -7) G (+9, -3)  
 D (-4, 0) H (+3, -6)



- ① II ② IV ③ I ④ IV



33) a)  $200\text{ g} = .2\text{ kg}$

$\$23.75/\text{kg}$

b)  $\$25.79/\text{kg}$

34) a)  $\$5.67/\text{m}$

b)  $175\text{ cm} = 1.75\text{ m}$

$\$4.86/\text{m}$

35) a)  $\$54.13/\text{kg}$

b)  $6000\text{ mg} = .006\text{ kg}$

$\$60/\text{kg}$

36) a)  $250\text{ mm} = 25\text{ cm}$

$\$.092/\text{cm}$

b)  $\$.089/\text{cm}$

Note: Don't round if an extra decimal place is needed

37)  $18.\bar{3}, 17.5, 10, 20$

38)  $5, 5, 6, 9$

39)  $2\frac{4}{5}, 2\frac{1}{2}, 2\frac{1}{2}, 3\frac{1}{3}$

40)  $3\frac{2}{3}, 3\frac{1}{2}, 3\frac{1}{4}, 3$

41)  $3.15, 3.175, 3.5, .75$

42)  $2.78, 2.75, \text{None}, 2.75$

43)  $0, -2, -2, +13$

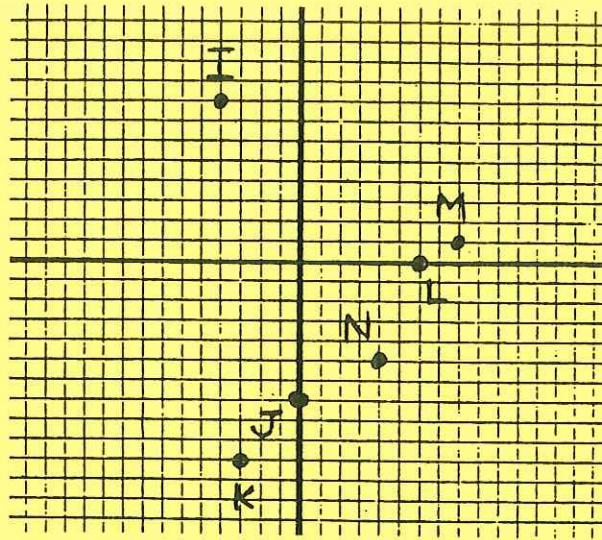
44)  $-\frac{3}{2}, -1, \text{None}, +11$

A  $(-7, -6)$  E  $(-6, +1)$

B  $(+5, +4)$  F  $(+9, -3)$

C  $(-2, +6)$  G  $(-3, 0)$

D  $(0, -5)$  H  $(+3, -10)$



45) III

46) I

47) II

48) IV

49) origin

50) vertical: y-axis  
horizontal: x-axis





## UNIT 7

# Plane Geometry

### 5. AREA & PERIMETER

- |  |   |  |
|--|---|--|
| <p>① Rectangle<br/> <math>A = (5)(2.5) = 12.5 \text{ cm}^2</math><br/> <math>P = 2(5) + 2(2.5) = 15 \text{ cm}</math></p>          | <p>⑨ Square<br/> <math>A = 81 \text{ m}^2</math> <math>P = 36 \text{ m}</math></p>  | <p>⑱ Trapezoid<br/> <math>A = \frac{1}{2}(6+3)(6) = 57 \text{ mm}^2</math><br/> <math>P = 7+6+8+13 = 34 \text{ mm}</math></p>          |
| <p>② Triangle<br/> <math>A = \frac{1}{2}(5.5)(2) = 5.5 \text{ cm}^2</math><br/> <math>P = 3 + 5.5 + 4 = 12.5 \text{ cm}</math></p> | <p>⑩ Triangle<br/> <math>A = \frac{1}{2}(2)(2) = 2 \text{ m}^2</math><br/> <math>P = 2+3+4 = 9 \text{ m}</math></p>                       | <p>⑲ Parallelogram<br/> <math>A = (4)(1.5) = 6 \text{ cm}^2</math><br/> <math>P = 2(2) + 2(4) = 12 \text{ cm}</math></p>               |
| <p>③ Triangle<br/> <math>A = \frac{1}{2}(4)(4) = 8 \text{ m}^2</math><br/> <math>P = 4.5 + 4 + 5 = 13.5 \text{ m}</math></p>       | <p>⑪ Triangle<br/> <math>A = \frac{1}{2}(3)(3) = 4.5 \text{ m}^2</math><br/> <math>P = 3 + 4 + 6 = 13 \text{ m}</math></p>                | <p>⑳ Triangle<br/> <math>A = \frac{1}{2}(3.5)(3.5) = 6.125 \text{ m}^2</math><br/> <math>P = 3.5 + 4 + 6 = 13.5 \text{ m}</math></p>   |
| <p>④ Parallelogram<br/> <math>A = (4)(2) = 8 \text{ m}^2</math><br/> <math>P = 2(4) + 2(2.5) = 13 \text{ m}</math></p>             | <p>⑫ Rectangle<br/> <math>A = (6)(9) = 54 \text{ m}^2</math><br/> <math>P = 2(6) + 2(9) = 30 \text{ m}</math></p>                         | <p>㉑ Rectangle<br/> <math>A = 8.25 \text{ m}^2</math> <math>P = 14 \text{ m}</math></p>  |
| <p>⑤ Triangle<br/> <math>A = \frac{1}{2}(4)(4) = 8 \text{ cm}^2</math><br/> <math>P = 3 + 4 + 5 = 12 \text{ cm}</math></p>         | <p>⑬ Triangle<br/> <math>A = \frac{1}{2}(8)(5) = 20 \text{ cm}^2</math><br/> <math>P = 6 + 8 + 12 = 26 \text{ cm}</math></p>              | <p>㉒ Triangle<br/> <math>A = \frac{1}{2}(5)(7) = 17.5 \text{ m}^2</math><br/> <math>P = 7.5 + 8 + 5 = 20.5 \text{ m}</math></p>        |
| <p>⑥ Rectangle<br/> <math>A = (2)(6.5) = 13 \text{ cm}^2</math><br/> <math>P = 2(2) + 2(6.5) = 17 \text{ cm}</math></p>            | <p>⑭ Triangle<br/> <math>A = \frac{1}{2}(7)(8) = 28 \text{ cm}^2</math><br/> <math>P = 7 + 9 + 10 = 26 \text{ cm}</math></p>              | <p>㉓ Trapezoid<br/> <math>A = \frac{1}{2}(3+7)(2) = 10 \text{ mm}^2</math><br/> <math>P = 2.5 + 3 + 3 + 7 = 15.5 \text{ mm}</math></p> |
| <p>⑦ Parallelogram<br/> <math>A = (3)(4) = 12 \text{ cm}^2</math><br/> <math>P = 2(3) + 2(4.5) = 15 \text{ cm}</math></p>          | <p>⑮ Trapezoid<br/> <math>A = \frac{1}{2}(6+9)(4.5) = 33.75 \text{ m}^2</math><br/> <math>P = 4.5 + 9 + 5 + 6 = 24.5 \text{ m}</math></p> | <p>㉔ Parallelogram<br/> <math>A = (4)(2) = 8 \text{ cm}^2</math><br/> <math>P = 2(4) + 2(2.5) = 13 \text{ cm}</math></p>               |
| <p>⑧ Triangle<br/> <math>A = \frac{1}{2}(3)(8) = 12 \text{ m}^2</math><br/> <math>P = 3.5 + 7 + 8 = 18.5 \text{ m}</math></p>      | <p>⑯ Triangle<br/> <math>A = \frac{1}{2}(5)(12) = 30 \text{ cm}^2</math><br/> <math>P = 5 + 12 + 13 = 30 \text{ cm}</math></p>            | <p>㉕ Triangle<br/> <math>A = \frac{1}{2}(3)(4) = 6 \text{ m}^2</math><br/> <math>P = 3 + 4 + 5 = 12 \text{ m}</math></p>               |
|  | <p>⑰ Parallelogram<br/> <math>A = (8)(4) = 32 \text{ cm}^2</math><br/> <math>P = 2(8) + 2(4.5) = 25 \text{ cm}</math></p>                 | <p>㉖ Trapezoid<br/> <math>A = \frac{1}{2}(4+7)(1.5) = 8.25 \text{ m}^2</math><br/> <math>P = 2 + 4 + 4 + 7 = 17 \text{ m}</math></p>   |

(27) Rectangle  
 $A = (3)(5) = 15 \text{ cm}^2$   
 $P = 2(3) + 2(5) = 16 \text{ cm}$

(28) Triangle  
 $A = \frac{1}{2}(4)(5) = 10 \text{ mm}^2$   
 $P = 4 + 6 + 5.3 = 15.3 \text{ mm}$

(29) Rectangle with a rectangle cut out  
 $A = (4)(5) - (1)(2) = 18 \text{ m}^2$   
 $P = 4 + 5 + 4 + 1 + 2 + 1 + 2 + 3 = 22 \text{ m}$

(30) Trapezoid  
 $A = \frac{1}{2}(1.5 + 5.5)(4.5) = 15.75 \text{ m}^2$   
 $P = 5.5 + 1.5 + 5 + 5.5 = 17.5 \text{ m}$

(31) Triangle  
 $A = \frac{1}{2}(10)(4) = 20 \text{ cm}^2$   
 $P = 5 + 9 + 10 = 24 \text{ cm}$

## 6. CIRCLES & POLYGONS

(1)  $A = \pi r^2$   
 $\pi (4)^2 = 16\pi \text{ m}^2$   
 $(3.14)(4)^2 = 50.24 \text{ m}^2$

$C = 2\pi r$   
 $(2)(\pi)(4) = 8\pi \text{ m}$   
 $(2)(3.14)(4) = 25.12 \text{ m}$

(2) Radius = 5.5 m  
 $A = \pi r^2$   
 $\pi (5.5)^2 = 30.25\pi \text{ m}^2$   
 $(3.14)(5.5)^2 = 94.985 \text{ m}^2$

$C = 2\pi r$   
 $(2)(\pi)(5.5) = 11\pi \text{ m}$   
 $(2)(3.14)(5.5) = 34.54 \text{ m}$

(3)  $A = \pi r^2$   
 $\pi (3)^2 = 9\pi \text{ m}^2$   
 $(3.14)(3)^2 = 28.26 \text{ m}^2$

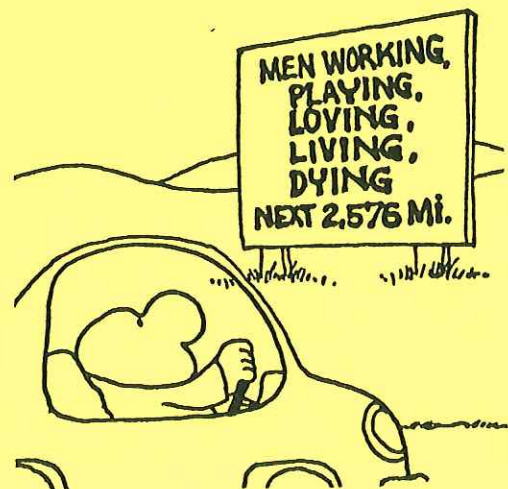
$C = 2\pi r$   
 $(2)(\pi)(3) = 6\pi \text{ m}$   
 $(2)(3.14)(3) = 18.84 \text{ m}$

(4) Radius = 5 m  
 $A = \pi r^2$   
 $\pi (5)^2 = 25\pi \text{ m}^2$   
 $(3.14)(5)^2 = 78.5 \text{ m}^2$

$C = 2\pi r$   
 $(2)(\pi)(5) = 10\pi \text{ m}$   
 $(2)(3.14)(5) = 31.4 \text{ m}$

(5) Radius = 2.5 m

$A = \pi r^2$   
 $\pi (2.5)^2 = 6.25\pi \text{ m}^2$   
 $(3.14)(2.5)^2 = 19.625 \text{ m}^2$





$$C = 2\pi r$$

$$(2)(\pi)(2.5) = 5\pi \text{ m}$$

$$(2)(3.14)(2.5) = 15.7 \text{ m}$$

⑥ Triangle

$$A = \frac{1}{2}(12)(7) = 42 \text{ m}^2$$

$$P = 8 + 12 + 11 = 31 \text{ m}$$

⑦ Rectangle

$$A = (9)(2) = 18 \text{ m}^2$$

$$P = 2(9) + 2(2) = 22 \text{ m}$$

⑧ Parallelogram

$$A = (4)(5.5) = 22 \text{ m}^2$$

$$P = 2(4) + 2(6) = 20 \text{ m}$$

⑨ Trapezoid

$$A = \frac{1}{2}(9+14)(5) = 57.5 \text{ m}^2$$

$$P = 5 + 9 + 7 + 14 = 35 \text{ m}$$

⑩ Triangle

$$A = \frac{1}{2}(16)(12) = 96 \text{ m}^2$$

$$P = 12 + 16 + 25 = 53 \text{ m}$$

⑪ Circle

$$A = \pi r^2$$

$$(\pi)(1.5)^2 = 2.25\pi \text{ m}^2$$

$$(3.14)(1.5)^2 = 7.065 \text{ m}^2$$

$$C = 2\pi r$$

$$(2)(\pi)(1.5) = 3\pi \text{ m}$$

$$(2)(3.14)(1.5) = 9.42 \text{ m}$$

⑫ Triangle

$$A = \frac{1}{2}(5)(11) = 27.5 \text{ m}^2$$

$$P = 11.5 + 12 + 5 = 28.5 \text{ m}$$

⑬ Trapezoid with rectangle cut out

$$A = \frac{1}{2}(16+12)(5) - (4)^2 = 54 \text{ m}^2$$

$$P = 3 + 6 + 12 + 7 + 9 + 4 + 4 + 4 = 49 \text{ m}$$

⑭ Triangle

$$A = \frac{1}{2}(3)(8) = 12 \text{ m}^2$$

$$P = 3 + 9 + 10 = 22 \text{ m}$$

## 7. SECTORS

① Central angle  $360 - (30 + 90) = 240^\circ$

$$A = \pi r^2 (\text{part})$$

$$\pi (5)^2 \left(\frac{240}{360}\right) = 16.\bar{6}\pi \text{ m}^2$$

$$(3.14)(5)^2 \left(\frac{240}{360}\right) = 52.\bar{3} \text{ m}^2$$

$$C = 2\pi r (\text{part}) + 4r$$

$$(2)(\pi)(5) \left(\frac{240}{360}\right) + (4)(5) = 6.\bar{6}\pi + 20 \text{ m}$$

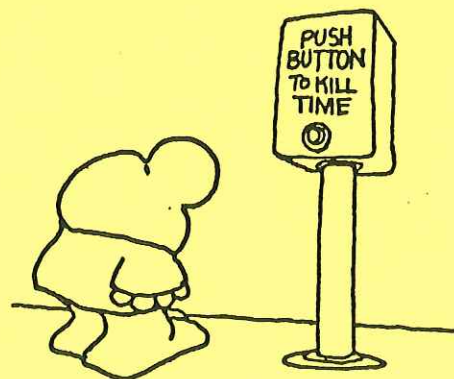
$$(2)(3.14)(5) \left(\frac{240}{360}\right) + (4)(5) = 40.9\bar{3} \text{ m}$$

② Central angle  $180 - 20 = 160^\circ$

$$A = \pi r^2 (\text{part})$$

$$\pi (4)^2 \left(\frac{160}{360}\right) = 7.\bar{1}\pi \text{ m}^2$$

$$(3.14)(4)^2 \left(\frac{160}{360}\right) = 22.32\bar{8} \text{ m}^2$$



$$C = 2\pi r (\text{part}) + 4r$$

$$(2)(\pi)(4) \left(\frac{160}{360}\right) + (4)(4) = 3.5\pi + 16 \text{ m}$$

$$(2)(3.14)(4) \left(\frac{160}{360}\right) + (4)(4) = 27.167 \text{ m}$$

③ Central angle  $360 - (90 + 140) = 130^\circ$

$$A = \pi r^2 (\text{part})$$

$$(\pi)(4)^2 \left(\frac{130}{360}\right) = 5.7\pi \text{ m}^2$$

$$(3.14)(4)^2 \left(\frac{130}{360}\right) = 18.142 \text{ m}^2$$

$$C = 2\pi r (\text{part}) + 4r$$

$$(2)(\pi)(4) \left(\frac{130}{360}\right) + (4)(4) = 2.8\pi + 16 \text{ m}$$

$$(2)(3.14)(4) \left(\frac{130}{360}\right) + (4)(4) = 25.071 \text{ m}$$

④ Central angle  $30 + 120 = 150^\circ$

$$A = \pi r^2 (\text{part})$$

$$(\pi)(3)^2 \left(\frac{150}{360}\right) = 3.75\pi \text{ m}^2$$

$$(3.14)(3)^2 \left(\frac{150}{360}\right) = 11.775 \text{ m}^2$$

$$C = 2\pi r (\text{part}) + 4r$$

$$(2)(\pi)(3) \left(\frac{150}{360}\right) + (4)(3) = 2.5\pi + 12 \text{ m}$$

$$(2)(3.14)(3) \left(\frac{150}{360}\right) + (4)(3) = 19.85 \text{ m}$$

⑤ Central angle  $90 + 60 = 150^\circ$

$$A = \pi r^2 (\text{part})$$

$$(\pi)(2)^2 \left(\frac{150}{360}\right) = 1.6\pi \text{ cm}^2$$

$$(3.14)(2)^2 \left(\frac{150}{360}\right) = 5.23 \text{ cm}^2$$

$$C = 2\pi r (\text{part}) + 4r$$

$$(2)(\pi)(2) \left(\frac{150}{360}\right) + (4)(2) = 1.6\pi + 8 \text{ cm}$$

$$(2)(3.14)(2) \left(\frac{150}{360}\right) + (4)(2) = 13.23 \text{ cm}$$

⑥ Central angle  $180^\circ$  Radius = 3.75 m

$$A = \pi r^2 (\text{part})$$

$$(\pi)(3.75)^2 \left(\frac{180}{360}\right) = 7.03125\pi \text{ m}^2$$

$$(3.14)(3.75)^2 \left(\frac{180}{360}\right) = 22.078125 \text{ m}^2$$

$$C = 2\pi r (\text{part}) + 2r$$

$$(2)(\pi)(3.75) \left(\frac{180}{360}\right) + (2)(3.75) = 3.75\pi + 7.5 \text{ m}$$

$$(2)(3.14)(3.75) \left(\frac{180}{360}\right) + (2)(3.75) = 19.275 \text{ m}$$

⑦ Central angle  $180^\circ$

$$A = \pi r^2 (\text{part})$$

$$(\pi)(4)^2 \left(\frac{180}{360}\right) = 8\pi \text{ m}^2$$

$$(3.14)(4)^2 \left(\frac{180}{360}\right) = 25.12 \text{ m}^2$$

$$C = 2\pi r (\text{part}) + 8r$$

$$(2)(\pi)(4) \left(\frac{180}{360}\right) + (8)(4) = 4\pi + 32 \text{ m}$$

$$(2)(3.14)(4) \left(\frac{180}{360}\right) + (8)(4) = 44.56 \text{ m}$$

⑧ Central angle  $40 + 40 + 10 = 90^\circ$

$$A = \pi r^2 (\text{part})$$

$$(\pi)(6)^2 \left(\frac{90}{360}\right) = 9\pi \text{ m}^2$$

$$(3.14)(6)^2 \left(\frac{90}{360}\right) = 28.26 \text{ m}^2$$

$$C = 2\pi r (\text{part}) + 6r$$

$$(2)(\pi)(6) \left(\frac{90}{360}\right) + (6)(6) = 3\pi + 36 \text{ m}$$

$$(2)(3.14)(6) \left(\frac{90}{360}\right) + (6)(6) = 45.42 \text{ m}$$

⑨ Central angle  $70 + 70 + 20 + 20 = 180^\circ$

$$A = \pi r^2 (\text{part})$$

$$(\pi)(4)^2 \left(\frac{180}{360}\right) = 8\pi \text{ cm}^2$$

$$(3.14)(4)^2 \left(\frac{180}{360}\right) = 25.12 \text{ cm}^2$$



$$C = 2\pi r (\text{part}) + 8r$$

$$(2)(\pi)(4) \left(\frac{180}{360}\right) + (8)(4) = 4\pi + 32 \text{ cm}$$

$$(2)(3.14)(4) \left(\frac{180}{360}\right) + (8)(4) = 44.56 \text{ cm}$$

⑩ Central angle  $20+30=150^\circ$

$$A = \pi r^2 (\text{part})$$

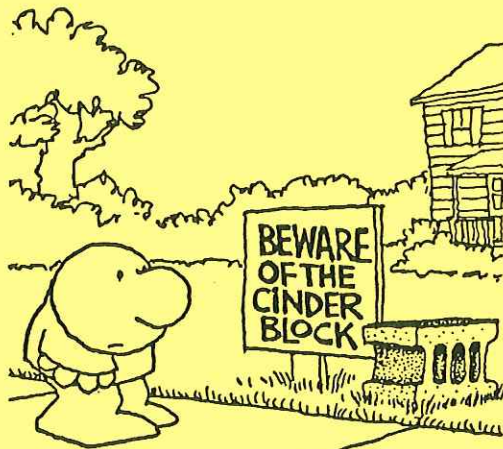
$$(\pi)(5)^2 \left(\frac{150}{360}\right) = 10.41\bar{6}\pi \text{ cm}^2$$

$$(3.14)(5)^2 \left(\frac{150}{360}\right) = 32.708\bar{3} \text{ cm}^2$$

$$C = 2\pi r (\text{part}) + 4r$$

$$(2)(\pi)(5) \left(\frac{150}{360}\right) + (4)(5) = 4.1\bar{6}\pi + 20 \text{ cm}$$

$$(2)(3.14)(5) \left(\frac{150}{360}\right) + (4)(5) = 33.08\bar{3} \text{ cm}$$



## 8. REVIEW

①  $A = \pi r^2$

$$\pi (6)^2 = 36\pi \text{ cm}^2$$

$$(3.14)(6)^2 = 113.04 \text{ cm}^2$$

$$C = 2\pi r$$

$$(2)(\pi)(6) = 12\pi \text{ cm}$$

$$(2)(3.14)(6) = 37.68 \text{ cm}$$

② Triangle with triangle cut out

Big right triangle:

$$A = \frac{1}{2}(12)(9) = 54 \text{ m}^2$$

Small triangle:

$$A = \frac{1}{2}(3)(2) = 3 \text{ m}^2$$

$$\text{Area: } 54 - 3 = 51 \text{ m}^2$$

$$\text{Perimeter: } 40 \text{ m}$$

③ Parallelogram

$$A = (6)(4.5) = 27 \text{ cm}^2$$

$$P = 2(6) + 2(5) = 22 \text{ cm}$$

④ Triangle

$$A = \frac{1}{2}(5)(5) = 12.5 \text{ cm}^2$$

$$P = 5 + 6.5 + 5 = 16.5 \text{ cm}$$

⑤ Trapezoid

$$A = \frac{1}{2}(5.5 + 3)(4) = 17 \text{ cm}^2$$

$$P = 4 + 5.5 + 4.5 + 3 = 17 \text{ cm}$$

⑥ Circle (Radius = 4 cm)

$$A = \pi r^2$$

$$\pi (4)^2 = 16\pi \text{ cm}^2$$

$$(3.14)(4)^2 = 50.24 \text{ cm}^2$$

$$C = 2\pi r$$

$$(2)(\pi)(4) = 8\pi \text{ cm}$$

$$(2)(3.14)(4) = 25.12 \text{ cm}$$

⑦ Trapezoid with rectangle cut out

$$\text{Trapezoid: } A = \frac{1}{2}(10+8)(3) = 27$$

$$\text{Rectangle: } A = (1)(5) = 5$$

$$\text{Area: } 27 - 5 = 22 \text{ cm}^2$$

$$\text{Perimeter: } 26.5 \text{ cm}$$

⑧ Central angle  $360 - (80) = 280^\circ$

$$A = \pi r^2 (\text{part})$$

$$\pi(5)^2 \left(\frac{280}{360}\right) = 19.4\bar{4} \pi \text{ m}^2$$

$$(3.14)(5)^2 \left(\frac{280}{360}\right) = 61.0\bar{5} \text{ m}^2$$

$$c = 2\pi r (\text{part}) + 4r$$

$$(2)(\pi)(5) \left(\frac{280}{360}\right) + (4)(5) = 7.7\bar{7}\pi + 20 \text{ m}$$

$$(2)(3.14)(5) \left(\frac{280}{360}\right) + (4)(5) = 44.4\bar{2} \text{ m}$$

⑨ Triangle

$$A = \frac{1}{2}(3)(2.5) = 3.75 \text{ cm}^2$$

$$P = 6.5 + 4 + 3 = 13.5 \text{ cm}$$

⑩ Trapezoid

$$A = \frac{1}{2}(3.5 + 5.5)(2) = 9 \text{ cm}^2$$

$$P = 3 + 3.5 + 2.2 + 5.5 = 14.2 \text{ cm}$$

⑪ Rectangle

$$A = (7.5)(1.5) = 11.25 \text{ cm}^2$$

$$P = 2(7.5) + 2(1.5) = 18 \text{ cm}$$

⑫ Central angle  $100 + 40 = 140^\circ$

$$A = \pi r^2 (\text{part})$$

$$\pi(5)^2 \left(\frac{140}{360}\right) = 9.7\bar{2} \pi \text{ cm}^2$$

$$(3.14)(5)^2 \left(\frac{140}{360}\right) = 30.52\bar{7} \text{ cm}^2$$

$$c = 2\pi r (\text{part}) + 4r$$

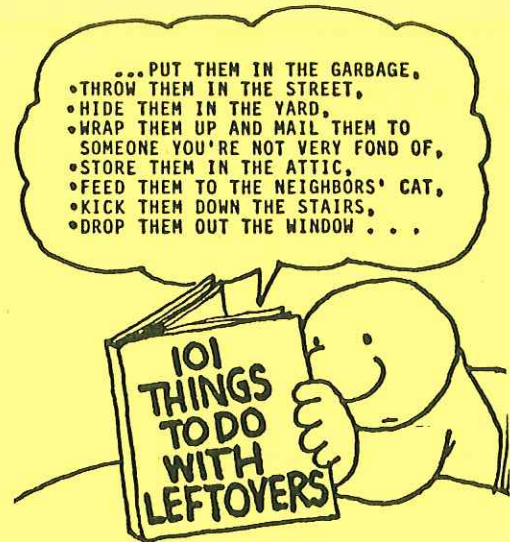
$$(2)(\pi)(5) \left(\frac{140}{360}\right) + (4)(5) = 3.8\bar{8}\pi + 20 \text{ cm}$$

$$(2)(3.14)(5) \left(\frac{140}{360}\right) + (4)(5) = 32.2\bar{7} \text{ cm}$$

⑬ Triangle

$$A = \frac{1}{2}(4)(7) = 14 \text{ cm}^2$$

$$P = 4 + 7 + 8.1 = 19.1 \text{ cm}$$





## QUARTER 2

# Cumulative Review

### REVIEW #1

- ① .06
- ② .008
- ③ Two million, five hundred thousand, twelve, and fifty-three thousandths
- ④ Four million, forty-four thousand, two hundred, and sixteen ten thousandths
- ⑤ 56,300
- ⑥ 60,000
- ⑦ 56,299.95
- ⑧ 56,300.0
- ⑨ 64
- ⑩ 1
- ⑪  $(3 \times 10^3) + (5 \times 10^1) + (4 \times 10^0) + (6 \times 1/10^3)$
- ⑫  $(2 \times 10^4) + (1 \times 10^1) + (5 \times 1/10^2)$
- ⑬  $3 \div 5, 5\sqrt{3}$
- ⑭  $4\sqrt{7}, 7/4$
- ⑮ 17, 19
- ⑯ 25, 26, 27, 28, 30
- ⑰  $2^2 \times 3 \times 5^2$
- ⑱  $2^3 \times 5^3$

- ⑲ 1, 2, 4, 5, 10, 20
- ⑳ 1, 2, 4, 7, 14, 28
- ㉑ 12, 24, 36, 48, 60
- ㉒ 9, 18, 27, 36, 45
- ㉓ 15
- ㉔ 75
- ㉕  $7/3$
- ㉖  $2 \frac{2}{3}$
- ㉗  $<$
- ㉘  $<$
- ㉙  $1/30$
- ㉚  $1/3$
- ㉛  $>$
- ㉜  $>$
- ㉝ .006
- ㉞ .00408
- ㉟ 4.66
- ㊱ 11.455
- ㊲ .19
- ㊳ .21
- ㊴ 3640
- ㊵ .257
- ㊶  $3/20$
- ㊷  $.2\bar{7}$
- ㊸  $2 \frac{2}{5}$
- ㊹ .06
- ㋀ 75%
- ㋁ 2.5%
- ㋂  $83.\bar{3}\%$
- ㋃  $1/200$
- ㋄ \$107.67
- ㋅ 24 girls
- ㋆  $44.\bar{4}\%$



- ⑤② 16
- ⑤③  $4/15$  of work
- ⑤④  $2/5$  of team
- ⑤⑤ 2, 3, 4, 6, 9
- ⑤⑥ 5, 3, 9
- ⑤⑦  $5 \frac{1}{24}$
- ⑤⑧  $8 \frac{11}{20}$
- ⑤⑨  $5 \frac{2}{3}$
- ⑥⑩  $1 \frac{8}{15}$
- ⑥① 54
- ⑥②  $4/15$
- ⑥③  $2 \frac{1}{2}$
- ⑥④  $2 \frac{1}{9}$
- ⑥⑤  $1/22$
- ⑥⑥  $19/90$
- ⑥⑦ 9
- ⑥⑧ cm
- ⑥⑨ 80g
- ⑦⑩ .0024km
- ⑦①  $-9.4^\circ\text{C}$
- ⑦②  $86^\circ\text{F}$
- ⑦③ a \$ .43/l  
b \$ .63/l
- ⑦④ a/b \$3.52/kg
- ⑦⑤  $>$
- ⑦⑥  $<$
- ⑦⑦ 1
- ⑦⑧ -19
- ⑦⑨ 18
- ⑦⑩ -14
- ⑧①  $4.8\bar{3}$  mean  
4.65 median  
4.1 mode  
2.5 range
- ⑧② -1.75 mean  
-2.5 median  
none mode  
10 range
- ⑧③ II
- ⑧④ III
- ⑧⑤  $-3^2 - (-2)^3 \times (-4)^0$   
 $-9 - (-8) \times (1)$   
 $-9 - (-8)$   
 $-9 + (8)$   
-1

$$(86) \frac{-2^2 \times (-3)}{-3} - (-3)^2$$

$$\frac{-4 \times (-3)}{-3} - (9)$$

$$\frac{12}{-3} + (-9) = (-4) + (-9) = \boxed{-13}$$

$$(87) I, O$$

$$(88) E, C, F$$

$$(89) 2(-3) - 3(-1)^3(2)$$

$$(-6) - 3(-1)(2)$$

$$(-6) - (-6)$$

$$(-6) + (6) = \boxed{0}$$

$$(90) a^2c - 2(a+b)$$

$$(-3)^2(-1) - 2(-3+2)$$

$$(9)(-1) - 2(-1)$$

$$(-9) - (-2) = (-9) + (2) = \boxed{-7}$$

$$(91) 2a^2 - 3a(a-2b) + ab$$

$$2a^2 - 3a^2 + 6ab + ab$$

$$\boxed{-a^2 + 7ab}$$

$$(92) 3xy - 2x(x-y) + 4$$

$$3xy - 2x^2 + 2xy + 4$$

$$\boxed{-2x^2 + 5xy + 4}$$

$$(93) 6 \text{ sides } - 2 = 4$$

$$4 \times 180 = \boxed{720^\circ}$$

$$(94) \text{ a line}$$

$$(95) \text{ rhombus: parallelogram with all sides congruent}$$

(96) vertex: point where an angle is formed

(97) F (not a trapezoid)

(98) T ( $180^\circ$ )

$$(99) A = \frac{1}{2}(8)(5) = 20 \text{ m}^2$$

$$P = 8 + 6.4 + 13 = 27.4 \text{ m}$$

$$(100) A = \frac{1}{2}(3)(8) = 12 \text{ m}^2$$

$$P = 3 + 8.5 + 10 = 21.5 \text{ m}$$

$$(101) A = \frac{1}{2}(7+11)(5) = 45 \text{ m}^2$$

$$P = 5 + 7 + 6 + 11 = 29 \text{ m}$$

$$(102) A = \frac{1}{2}(8+5)(6.5) = 42.25 \text{ cm}^2$$

$$P = 8 + 7 + 5 + 7 = 27 \text{ cm}$$

$$(103) A = \pi r^2$$

$$\pi(2.5)^2 = 6.25\pi \text{ cm}^2$$

$$(3.14)(2.5)^2 = 19.625 \text{ cm}^2$$

$$C = 2\pi r$$

$$(2)(\pi)(2.5) = 5\pi \text{ cm}$$

$$(2)(3.14)(2.5) = 15.7 \text{ cm}$$

$$(104) A = \pi r^2$$

$$\pi(6.5)^2 = 42.25\pi \text{ cm}^2$$

$$(3.14)(6.5)^2 = 132.665 \text{ cm}^2$$

$$C = 2\pi r$$

$$(2)(\pi)(6.5) = 13\pi \text{ cm}$$

$$(2)(3.14)(6.5) = 40.82 \text{ cm}$$

$$(105) \text{ central angle } 20 + 90 = 110^\circ$$

$$A = \pi r^2 \text{ (part)}$$

$$\pi(2)^2 \left(\frac{110}{360}\right) = 1.2\pi \text{ m}^2$$

$$(3.14)(2)^2 \left(\frac{110}{360}\right) = 3.837 \text{ m}^2$$



$$C = 2\pi r (\text{part}) + 4r$$

$$(2)(\pi)(2) \left(\frac{110}{360}\right) + (4)(2) = 1.2\pi + 8m$$

$$(2)(3.14)(2) \left(\frac{110}{360}\right) + (4)(2) = 11.837m$$

106 Central angle  $180^\circ$

$$A = \pi r^2 (\text{part})$$

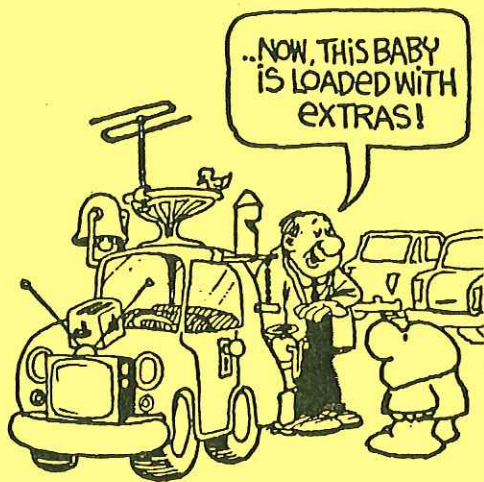
$$\pi(4.5)^2 \left(\frac{180}{360}\right) = 10.125\pi \text{ cm}^2$$

$$(3.14)(4.5)^2 \left(\frac{180}{360}\right) = 31.7925 \text{ cm}^2$$

$$C = 2\pi r (\text{part}) + 2r$$

$$(2)(\pi)(4.5) \left(\frac{180}{360}\right) + (2)(4.5) = 4.5\pi + 9 \text{ cm}$$

$$(2)(3.14)(4.5) \left(\frac{180}{360}\right) + (2)(4.5) = 23.13 \text{ cm}$$



### REVIEW #2

1 8000

2 .6

3 eight million, five hundred fifteen thousand, three hundred, and one hundred seven thousandths

4 sixteen million, three thousand,

forty, and eighty-five thousandths

5 84,579.98      8 84,600

6 80,000      9 100,000

7 84,580.0      10 125

11  $(2 \times 10^6) + (5 \times 10^2) + (3 \times 1/10^2)$

12  $(1 \times 10^5) + (9 \times 10^3) + (6 \times 1/10^3)$

13  $9 \div 7, 9/7$       16 6,8,9,10

14  $7\sqrt{5}, 5/7$       17  $2^5 \times 5^2$

15 31      18  $2^7 \times 5$

19 1,2,3,5,6,10,15,30

20 1,2,4,8,16,32

21 11,22,33,44,55

22 7,14,21,28,35

23 4      34 .0132

24 24      35 8.955

25  $19/5$       36 10.73

26  $4\frac{1}{2}$       37 .3

27  $\frac{8}{3} \square \frac{13}{5}$       38 4.67

40  $> 39$       39 4500

28  $\frac{9}{5} \square \frac{20}{11}$       40 .0213

41  $6/25$       42  $.4\bar{16}$

29  $1/8$       43  $1\frac{2}{25}$

30 2      44 .045

31  $>$       45  $16.\bar{6}\%$

32  $>$       46  $202.5\%$

33 .00042

47)  $22.\bar{2} \%$

48)  $1/400$

49) Purch. pr.  $\frac{200}{250} = \frac{x}{100}$   
Org. pr.

$x = 80 \quad 100 - 80 = 20$

**20% discount**

50) Absent  $\frac{12}{x} = \frac{5}{100}$   
Total

$x = 240 \quad 240 - 12 = 228$

**228 present**

51) Part  $\frac{9}{25} = \frac{x}{100}$   
Total

$x = 36\%$

52) Part  $\frac{15}{x} = \frac{25}{100}$   
Total

$x = 60$

53) If  $\frac{3}{4}$  have IL plates, then  $\frac{1}{4}$  do not:

$\frac{1}{3} \times \frac{1}{4} = \frac{1}{12}$  new but not IL

54)  $\frac{2}{3} \div 6 = \frac{1}{9}$  hour each

55) 2, 3, 4, 6, 9

56) 5

57)  $8 \frac{1}{14}$

58)  $10 \frac{7}{15}$

59)  $7 \frac{1}{8}$

60)  $4 \frac{13}{20}$

61) 24

62)  $\frac{1}{15}$

63)  $1 \frac{1}{2}$

64)  $13 \frac{1}{25}$

65)  $1000x = 12.\bar{2}$   
 $100x = 1.\bar{2}$

$900x = 11$

$x = \frac{11}{900}$

66)  $100x = 34.\bar{34}$   
 $x = .\bar{34}$

$99x = 34$

$x = \frac{34}{99}$

67) km

68) l

69) .024 m

70) 50,000 g

71)  $(-9)(1.8) + 32$   
 $15.8^\circ\text{F}$

72)  $(10 - 32) \div 1.8$   
 $-12.\bar{2}^\circ\text{C}$

73) a \$3/kg

b \$2.83/kg

74) a \$.06/cm  
b \$.07/cm

75) >

76) <

77) 2

78) -14

79) -24

80) 27

81) 1.58 $\bar{3}$  mean  
1.65 median  
1.9 mode  
1.9 range

82) -1/6 mean  
-1 1/2 median  
-6, 7 mode  
13 range

83) I

84) II

85)  $-2^2 - (-1)^0 \times (-3)^2$   
 $-4 - (1) \times (9)$   
 $-4 - (9)$   
 $-4 + (-9) = -13$

86)  $\frac{-1^3 - (-1)^2}{-1 + (-1)^0} - (-2)^3$   
 $\frac{-1 - (1)}{-1 + (1)} - (-8)$   
 $\frac{-2}{0} + 8 = \text{undefined}$

$\frac{-2}{0} + 8 = \text{undefined}$

87) I, C, T

88) E, O

89)  $3xy - y^2$   
 $3(-)(-2) - (-2)^2 = 2$



90)  $2x^2y - xy^2$   
 $(2)(-1)^2(-2) - (-1)(-2)(-3)$   
 $(2)(1)(-2) - (-1)(-2)(-3)$   
 $(-4) - (-6) = (-4) + (6) = \boxed{2}$

91)  $2xy - 3x(y-2) - 1 + x$   
 $2xy - 3xy + 6x - 1 + x$   
 $\boxed{-xy + 7x - 1}$

92)  $2x^2 - x(y+2x) + xy$   
 $2x^2 - xy - 2x^2 + xy = \boxed{0}$

93) 8 sides  $-2 = 6$   
 $6 \times 180 = 1080 \div 8 = \boxed{135^\circ}$

94) point

95) line of symmetry: line dividing a region into two congruent parts

96) chord: line segment from one point on a circle to another point on the circle

97) T

98) F

99)  $A = \frac{1}{2}(2.5)(1) = 1.25 \text{ m}^2$   
 $P = 4 + 1 + 2.5 + 1.8 = 8.4 \text{ m}$

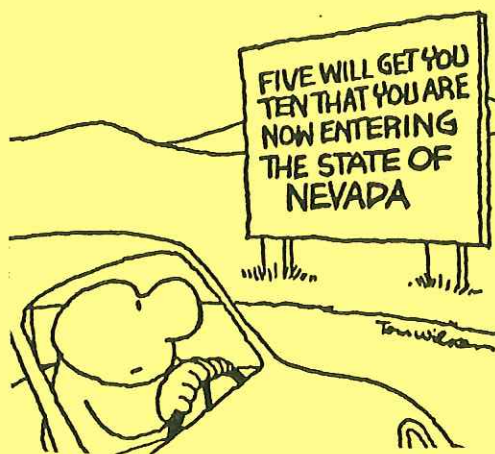
100)  $A = \frac{1}{2}(10)(5) = 25 \text{ cm}^2$   
 $P = 6 + 10 + 8 = 24 \text{ cm}$

101)  $A = \frac{1}{2}(11+6)(6) = 51 \text{ m}^2$   
 $P = 11 + 7 + 6 + 6.5 = 30.5 \text{ m}$

102)  $A = \frac{1}{2}(3.5+12)(8.5) = 65.875 \text{ cm}^2$   
 $P = 8.5 + 12 + 11 + 3.5 = 35 \text{ cm}$

103)  $A = \pi r^2$   
 $\pi(3.5)^2 = 12.25\pi \text{ m}^2$   
 $(3.14)(3.5)^2 = 38.465 \text{ m}^2$

$C = 2\pi r$   
 $(2)(\pi)(3.5) = 7\pi \text{ m}$   
 $(2)(3.14)(3.5) = 21.98 \text{ m}$



104)  $A = \pi r^2$   
 $\pi(3.75)^2 = 14.0625\pi \text{ cm}^2$   
 $(3.14)(3.75)^2 = 44.15625 \text{ cm}^2$

$C = 2\pi r$   
 $(2)(\pi)(3.75) = 7.5\pi \text{ cm}$   
 $(2)(3.14)(3.75) = 23.55 \text{ cm}$

105) Central angle  $75+75=150^\circ$

$A = \pi r^2$  (part)  
 $\pi(3)^2 \left(\frac{150}{360}\right) = 3.75\pi \text{ m}^2$   
 $(3.14)(3)^2 \left(\frac{150}{360}\right) = 11.775 \text{ m}^2$

$$C = 2\pi r (\text{part}) + 4r$$

$$(2)(\pi)(3) \left(\frac{150}{360}\right) + (4)(3) = 2.5\pi + 12 \text{ m}$$

$$(2)(3.14)(3) \left(\frac{150}{360}\right) + (4)(3) = 19.85 \text{ m}$$

106) Central angle  $360 - 60 = 300^\circ$

$$A = \pi r^2 (\text{part})$$

$$\pi (7)^2 \left(\frac{300}{360}\right) = 40.8\bar{3}\pi \text{ cm}^2$$

$$(3.14)(7)^2 \left(\frac{300}{360}\right) = 128.21\bar{6} \text{ cm}^2$$

$$C = 2\pi r (\text{part}) + 2r$$

$$(2)(\pi)(7) \left(\frac{300}{360}\right) + (2)(7) = 11.6\pi + 14 \text{ cm}$$

$$(2)(3.14)(7) \left(\frac{300}{360}\right) + (2)(7) = 50.6\bar{3} \text{ cm}$$

### REMIEDIATION

1) a).04  
b).0001

2) a) 589,940.0      d) 590,000  
b) 589,900      e) 589,939.959  
c) 589,939.96    f) 589,940

3) a) 216      c) 10,000  
b) 32      d) 1

4) a)  $(3 \times 10^4) + (5 \times 10^2) + (6 \times 1/10^2)$   
b)  $(4 \times 10^5) + (2 \times 10^0) + (7 \times 1/10^3)$

5) a)  $11/3$       c)  $1\frac{3}{5}$   
b)  $2\frac{1}{4}$       d)  $3\frac{1}{3}$

6) a) 17, 19      b) 40, 43, 44, 45

7) a)  $80 = 2^4 \times 5$

b)  $360 = 2^3 \times 3^2 \times 5$

8) a) 18  
b) 60

c) 6  
d) 4

9) a)  $3\sqrt{4} \frac{7}{3}$

b)  $7\sqrt{4} \frac{4}{7}$

10) a)  $\frac{12}{5} \square \frac{7}{3}$   
 $36 > 35$

b)  $\frac{13}{4} \square \frac{16}{5}$   
 $65 > 64$

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

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

$$\frac{1}{3} \div 2\frac{1}{2}$$

$$\frac{3}{4} \div \frac{1}{2}$$

$$\frac{1}{3} \div \frac{5}{2}$$

$$\frac{3}{4} \times \frac{2}{1} = \frac{3}{2}$$

$$\frac{1}{3} \times \frac{2}{5} = \frac{2}{15}$$

$$\frac{3}{2} \div 3$$

$$1\frac{1}{5} \div \frac{2}{15}$$

$$\frac{3}{2} \times \frac{1}{3} = \boxed{\frac{1}{2}}$$

$$\frac{6}{5} \times \frac{15}{2} = \boxed{9}$$

12) a) .0075

d) 62.5%

b)  $3/400$

e)  $1\frac{1}{4}$

c) .625

f) 125%

13) Discount  $\frac{n}{44} = \frac{8}{100}$   
Reg. pr.

$$100n = 352 \quad n = 3.52$$

$$44 - 3.52 = \boxed{\$40.48}$$

Discount  $\frac{8}{n} = \frac{5}{100}$   
Reg. pr.

$$5n = 800 \quad n = 160$$

$$160 - 8 = 152$$

$$\boxed{\$152}$$



⑭ has work  $\frac{14}{22} = \frac{n}{100}$   
 Total  $n = 63.\bar{63}$  63.63% with work

blue/black  $\frac{n}{20} = \frac{75}{100}$   
 Total  $n = 1500$  15 pencils

⑮ part  $\frac{8}{n} = \frac{12.5}{100}$   
 total  $12.5n = 800$  64

part  $\frac{12}{8} = \frac{n}{100}$   
 total  $8n = 1200$  150%

⑯  $\frac{1}{2} \times \frac{1}{4} = \frac{1}{8}$  of practice

$\frac{3}{4} \div 8$

$\frac{3}{4} \times \frac{1}{8} = \frac{3}{32}$  of the cake

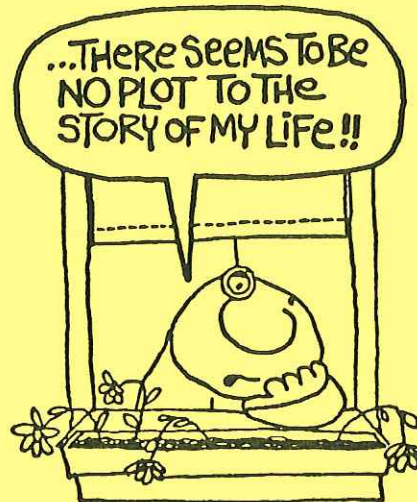
⑰ a) 2 5 10 3 4 6    b) 3 9

⑱ a)  $6\frac{1}{3} \times \frac{4}{4} = 8\frac{4}{12}$   
 $- 1\frac{3}{4} \times \frac{3}{3} = 1\frac{9}{12}$   
4  $\frac{7}{12}$

b)  $8 = 7\frac{5}{5}$   
 $- 2\frac{2}{5} = -2\frac{2}{5}$   
5  $\frac{3}{5}$

⑲ a)  $\frac{7}{10} \times \frac{25}{42}$   
 $\frac{1}{2} \times \frac{5}{6} = \frac{5}{12}$

b)  $\frac{11}{12} \times \frac{8}{33}$   
 $\frac{1}{3} \times \frac{2}{3} = \frac{2}{9}$



⑳ a)  $1000x = 36.\bar{6}$   
 $100x = 3.\bar{6}$   


---

 $900x = 33$   
 $x = \frac{11}{300}$

b)  $100x = 24.\bar{24}$   
 $x = .\bar{24}$   


---

 $99x = 24$   
 $x = \frac{24}{99} = \frac{8}{33}$

㉑ a) kg    b) cm    c) l    d) ml

㉒ a) 2500g    c) 150 kg  
 b) .35 mm    d) 600 cm

㉓ a)  $(6)(1.8) + 32 = 42.8^\circ\text{F}$   
 b)  $(25 - 32) \div 1.8 = -3.\bar{8}^\circ\text{C}$

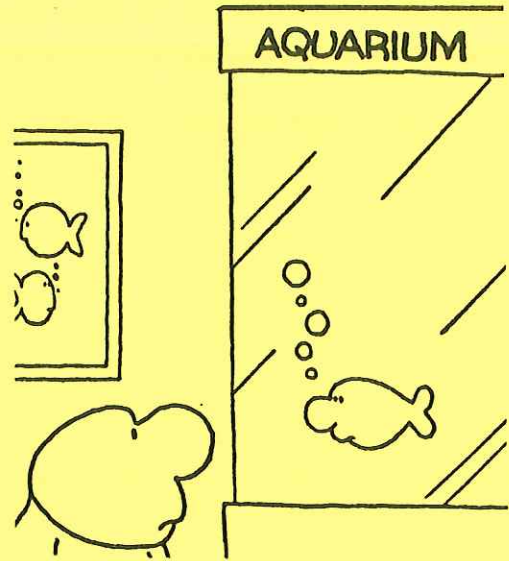
㉔ a) A \$1.36/l    b) \$1.60/l  
 a) \$2.88/kg    B \$2.72/kg

㉕ a) 6    c) -3  
 b) -72    d) 24

- 26) a)  $-3.\bar{3}$  mean  
 $-3.5$  median  
 none mode  
 $14$  range
- b)  $3.2$  mean  
 $2.8$  median  
 $2.5$  mode  
 $2.2$  range

- 27) a) I  
 b) III

- 28) a) E, O  
 b) I, C, T



- 29) a)  $-3^2 - (-2)^3 \div (-2)^2$   
 $-9 - (-8) \div (4)$   
 $-9 - (-2) = -9 + (2) = \boxed{-7}$
- b)  $\frac{-4^2 - 5^0}{-2^2 + 4} - 3^2 = \frac{-16 - 1}{-4 + 4} - 9 = \frac{-17}{0} - 9$   
 $\boxed{\text{undefined}}$

- 30) a)  $3xy - 2xz$   
 $3(-1)(-2) - 2(-1)(2)$   
 $(6) - (-4) = (6) + (4) = \boxed{10}$
- b)  $x^2y - 2y^2$   
 $(-1)^2(-2) - 2(-2)^2$   
 $(1)(-2) - 2(4)$   
 $(-2) - (8) = (-2) + (-8) = \boxed{-10}$

- 31) a)  $2(a-3) - 3(2a+1)$   
 $2a - 6 - 6a - 3 = \boxed{-4a - 9}$
- b)  $x(2x-y) - xy + x^2$   
 $2x^2 - xy - xy + x^2 = \boxed{3x^2 - 2xy}$

- 32) a) 4 sides  $-2 = 2$   
 $2 \times 180 = \boxed{360^\circ}$
- b) 6 sides  $-2 = 4$   
 $4 \times 180 = 720 \div 6 = \boxed{120^\circ}$

- 33) a) F b) T c) F d) T

34)

- 35) a)  $A = \frac{1}{2}(5)(12)$  b)  $A = \frac{1}{2}(8)(7)$

$\boxed{30 \text{ m}^2}$

$\boxed{28 \text{ m}^2}$

$P = 5 + 12 + 13$

$P = 8 + 17.5 + 25$

$\boxed{30 \text{ m}}$

$\boxed{50.5 \text{ m}}$

- 36) a)  $A = \frac{1}{2}(12+15)(5) = \boxed{67.5 \text{ cm}^2}$

$P = 5.8 + 12 + 5 + 15 = \boxed{37.8 \text{ cm}}$

- b)  $A = \frac{1}{2}(3.5+5)(2.5) = \boxed{10.625 \text{ cm}^2}$

$P = 3 + 5 + 2.75 + 3.5 = \boxed{14.25 \text{ cm}}$

- 37) a)  $A = \pi r^2$

$\pi (3.25)^2 = 10.5625 \pi \text{ m}^2$

$(3.14)(3.25)^2 = 33.16625 \text{ m}^2$

$C = 2\pi r$

$(2)\pi(3.25) = 6.5\pi \text{ m}$

$(2)(3.14)(3.25) = 20.41 \text{ m}$



$$b) A = \pi r^2$$

$$\pi(4.75)^2 = 22.5625\pi \text{ m}^2$$

$$(3.14)(4.75)^2 = 70.84625 \text{ m}^2$$

$$C = 2\pi r$$

$$(2)(\pi)(4.75) = 9.5\pi \text{ m}$$

$$(2)(3.14)(4.75) = 29.83 \text{ m}$$

38) a) central angle  $90^\circ$

$$A = \pi r^2 (\text{part})$$

$$\pi(7)^2 \left(\frac{90}{360}\right) = 12.25\pi \text{ cm}^2$$

$$(3.14)(7)^2 \left(\frac{90}{360}\right) = 38.465 \text{ cm}^2$$

$$C = 2\pi r (\text{part}) + 2r$$

$$(2)(\pi)(7) \left(\frac{90}{360}\right) + (2)(7) = 3.5\pi + 14 \text{ cm}$$

$$(2)(3.14)(7) \left(\frac{90}{360}\right) + (2)(7) = 24.99 \text{ cm}$$

b) central angle

$$360 - [2(55) + 2(45)] = 160^\circ$$

$$A = \pi r^2 (\text{part})$$

$$\pi(5)^2 \left(\frac{160}{360}\right) = 11.\bar{1}\pi \text{ cm}^2$$

$$(3.14)(5)^2 \left(\frac{160}{360}\right) = 34.\bar{8} \text{ cm}^2$$

$$C = 2\pi r (\text{part}) + 8r$$

$$(2)(\pi)(5) \left(\frac{160}{360}\right) + (8)(5) = 4.\bar{4}\pi + 40 \text{ cm}$$

$$(2)(3.14)(5) \left(\frac{160}{360}\right) + (8)(5) = 53.9\bar{5} \text{ cm}$$

39) - 45)

a) product

b) infinite decimal

c) regular polygon

d) circumference

e) square

f) liter

g) horizontal

h) prime number

i) hexagon

j) straight angle

k) circle

l) numerator

m) vertical angles

n) complex fraction

o) mode

p) acute angle

q) hypotenuse

r) undefined value

s) coefficient

t) proportion