Friendship Junior High School
Sixth Grade Accelerated Math Program

Room 102A (Mr. Lavine)

1

1st Quarter Units of Study

Whole Numbers
Fractions
Decimals
Proportions & Percentages

Friendship Junior High School
Sixth Grade Accelerated Math
Mr. Lavine

First Quarter Goals and Objectives

During the first quarter, students will still be adjusting to the new expectations of junior high. Before moving into higher level math concepts at the beginning of the next marking period, our emphasis will be placed on the following goals and objectives:

Development of Disciplined Study Techniques
90% Accuracy Level on Unit Tests
Organization and Neatness of Worksheets
Responsibility for Daily Work
Adjustment to the Pace of Instruction
Disciplined Preparation for a Cumulative Final Exam

It is important for students to develop this foundation during the early weeks of school while the curriculum involves a review and extension of basic math skills.

It is this foundation that will enable students to maintain a high level of accuracy when the curriculum moves into higher level concepts at the beginning of the second quarter.

UNIT 1

Whole Numbers

1. PLACE VALUE

What is the value of the digit "3" in each of the following:

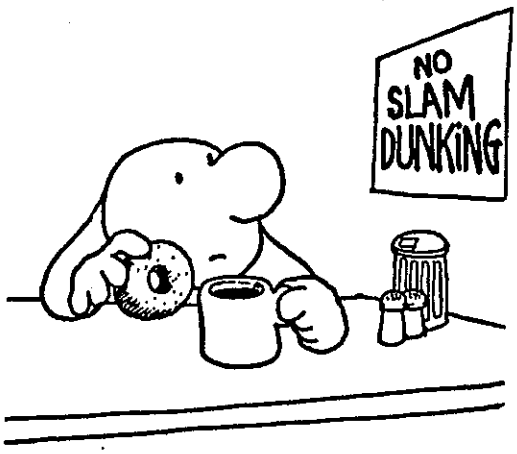
① 43,857
② 300,247
③ 61,293
④ 584,231

What is the value of:

⑤ "2" in 29,386
⑥ "9" in 458,292
⑦ "0" in 50,286

Write in words:

⑧ 643,282
⑨ 9,054,036
⑩ 12,000,500,012
⑪ 95,013,044



Write each of the following as a standard numeral:

⑫ Three million, two hundred fifteen thousand, fifty-six

⑬ Forty-eight million, thirty-seven

⑭ Twelve billion, five hundred eight thousand, twenty

⑮ Six million, six thousand, six

2. ROUNDING

Round 58,396 to the nearest:

① 1
② 10
③ 100
④ 1000
⑤ 10,000
⑥ 100,000

Round 3,599 to the nearest:

⑦ 100
⑧ 1
⑨ 10,000
⑩ 1000
⑪ 10

Round 780,000 to the nearest:

⑫ 10
⑬ 10,000
⑭ 100,000

Round 809,951 to the nearest:

⑮ 10 ⑰ 1,000,000 ⑲ 1
⑯ 1000 ⑱ 100 ⑳ 10,000

Round 3,500,290 to the nearest:

㉑ 100 ㉒ 1000 ㉓ 1,000,000

Round 1,999,991 to the nearest:

㉔ 10 ㉕ 10,000 ㉖ 10,000,000

3. EXPONENTS

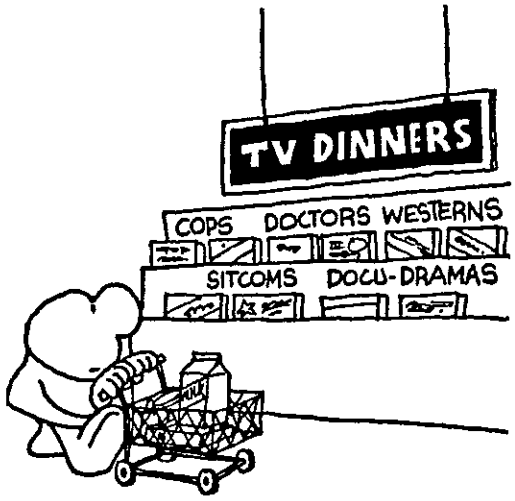
Indicate the value for each:

① 5^2 ⑥ 2^4 ⑪ 8^0
② 7^2 ⑦ 10^2 ⑫ 10^0
③ 3^3 ⑧ 10^5 ⑬ 2^3+5^2
④ 2^3 ⑨ 10^7 ⑭ 6^2-3^3
⑤ 5^3 ⑩ 4^1

4. RENAMING DIVISION

Rewrite each two ways:

① $3\div2$ ⑤ $4\overline{)7}$
② $7\div5$ ⑥ $2/3$
③ $8\div3$ ⑦ $4/9$
④ $2\overline{)5}$



5. EXPANDING

Expand using exponents:

① 46,253 ⑤ 803,040
② 6,003 ⑥ 25,034
③ 250,034 ⑦ 8,000,000
④ 6,000

6. OPERATIONS

Calculate as indicated. Use fractional remainders for division problems:

① 34,658 + 269
② 457 - 68
③ 12,221 + 349
④ 6,436 - 643
⑤ 15,340 - 745
⑥ 6,584 - 5,432
⑦ 4,563,203 - 3,762

⑧ 2,868 + 34,200
⑨ 843 × 29
⑩ 1500 × 350
⑪ 1254 ÷ 16
⑫ 98,572 ÷ 25
⑬ 56,987 ÷ 270
⑭ 965 × 311
⑮ 785 ÷ 15
⑯ 5214 ÷ 49
⑰ 1234 ÷ 12

7. PRIMES / COMPOSITES

List each of the following:

① Primes (10 to 20)
② Composites (30 to 40)
③ Primes (60 to 70)
④ Composites (40 to 50)

8. PRIME FACTORIZATION

Use exponents and list the factors in ascending order:

① 80
② 60
③ 400
④ 525
⑤ 216
⑥ 250
⑦ 210
⑧ 81

9. DIVISIBILITY

Indicate numbers from the list that divide evenly into each of the following:

List (2, 5, 10, 3, 4, 6, 9)

① 31,000
② 25
③ 45
④ 600
⑤ 48
⑥ 540
⑦ 230,001
⑧ 82,104
⑨ 273,645
⑩ 651
⑪ 1234
⑫ 8651
⑬ 9,000,000
⑭ 297
⑮ 100

10. FACTORS

List factors for each:

① 18
② 25
③ 48
④ 64

11. GCF

Indicate the greatest common factor:

① 10, 15
② 18, 27
③ 14, 35
④ 9, 27
⑤ 12, 30

12. MULTIPLES

List the first five multiples:

① 7
② 11
③ 8
④ 12

13. LCM

Indicate the least common multiple:

① 8, 12
② 7, 9
③ 21, 14
④ 25, 200
⑤ 15, 25

14. REVIEW

What is the value of "6" in each of the following:

① 26,342
② 846,300,123
③ 60,422
④ 586
⑤ 43,261

Write in words:

⑥ 5,843,210
⑦ 4,854
⑧ 210,000
⑨ 435,100
⑩ 2,000,000,100

Round 584,371 to the nearest:

⑪ 10 ⑫ 1000 ⑬ 100 ⑭ 100,000

Round 4,899,950 to the nearest:

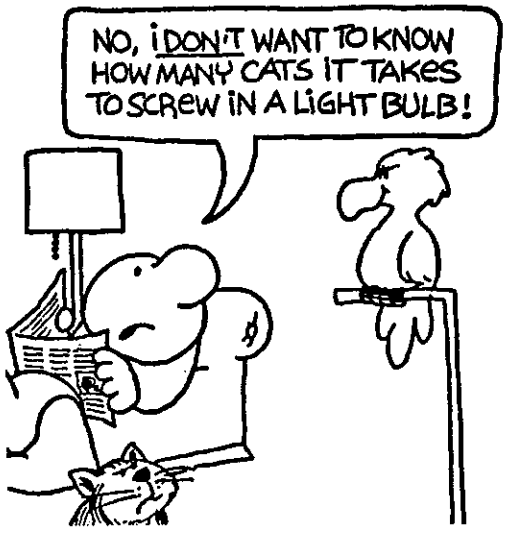
(15) 10
(16) 10,000
(17) 100
(18) 1,000,000
(19) 1,000
(20) 10,000,000

Exponents:

(21) 2^3
(22) 3^4
(23) 6^2
(24) 5^3
(25) 2^5

Expand using exponents:

(26) 20,835
(27) 7,050,402



Rename division:

(28) $8 \div 5$ = fraction, $\_\overline{}$
(29) $2/7$ = $\_ \div \_$, $\_\overline{}$
(30) $3\overline{)4}$ = fraction, $\_ \div \_$

Operations:

(31) 24,200 − 6,887
(32) 5432 × 655
(33) 24,200 + 346 + 4,964
(34) 4,975 ÷ 24 use a fractional remainder

Prime factorization:

(35) 144
(36) 256

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

(37) 284,301
(38) 450,000

Factors:

(39) 42
(40) 50

Greatest Common Factor:
GCF

(41) 25, 35

(42) 18, 30

Multiples:
List the first five

(43) 13

(44) 17

Least Common Multiple:
LCM

(45) 12, 18

(46) 24, 8

Primes / Composites:

(47) List primes (1 to 25)

(48) List composites (50 to 60)

UNIT 2

Fractions

1. REDUCING

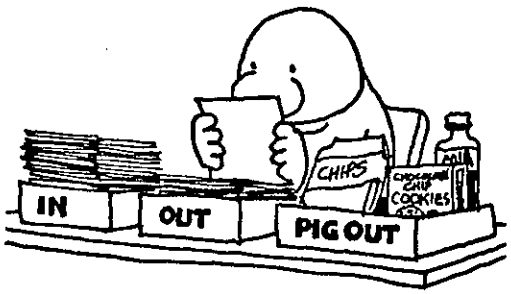
Reduce each fraction:

① $8/24$
② $16/28$
③ $14/21$
④ $5/7$
⑤ $9/15$
⑥ $33/66$
⑦ $15/25$
⑧ $18/30$
⑨ $20/25$
⑩ $50/75$

2. RENAMING

Rename each to an improper fraction:

① $2\frac{3}{4}$
② $4\frac{1}{3}$
③ $12\frac{2}{5}$
④ $5\frac{3}{7}$
⑤ $6\frac{1}{2}$



Rename each to a mixed numeral:

⑥ $13/5$
⑦ $19/2$
⑧ $16/6$
⑨ $14/8$
⑩ $26/4$

3. EQUIVALENCE

Solve for x:

① $\frac{3}{5} = \frac{x}{15}$
② $\frac{7}{9} = \frac{x}{27}$
③ $\frac{x}{16} = \frac{3}{8}$
④ $\frac{x}{12} = \frac{6}{8}$
⑤ $\frac{4}{6} = \frac{10}{x}$
⑥ $\frac{5}{8} = \frac{20}{x}$
⑦ $\frac{14}{20} = \frac{x}{30}$
⑧ $\frac{6}{21} = \frac{x}{28}$

4. COMPARISONS

Place a comparison sign in the box (<, >, =):

① $\frac{3}{5} \square \frac{7}{10}$

② $\frac{4}{8} \square \frac{5}{11}$

③ $\frac{3}{5} \square \frac{2}{3}$

④ $1\frac{1}{2} \square \frac{4}{3}$

⑤ $\frac{2}{7} \square \frac{1}{4}$

⑥ $\frac{4}{5} \square \frac{1}{2}$

⑦ $2\frac{1}{3} \square \frac{14}{6}$

⑧ $\frac{3}{2} \square 1\frac{2}{3}$

5. ADDITION

Find each sum:

① $\frac{3}{5} + \frac{2}{3}$

② $\frac{5}{8} + \frac{1}{2}$

③ $\frac{4}{7} + \frac{2}{3}$

④ $2\frac{1}{3} + 5\frac{3}{4}$

⑤ $4\frac{1}{3} + 2\frac{1}{2}$

⑥ $14\frac{1}{3} + 5\frac{2}{5}$

⑦ $6\frac{1}{5} + \frac{3}{4}$

⑧ $\frac{2}{7} + 3\frac{1}{5}$

⑨ $6 + 3\frac{3}{4}$

⑩ $5\frac{2}{9} + 6\frac{1}{3}$

6. SUBTRACTION

Find each difference:

① $\frac{3}{5} - \frac{1}{3}$

② $2\frac{1}{2} - \frac{3}{8}$

③ $4\frac{1}{3} - 3\frac{1}{4}$

④ $6\frac{2}{3} - 4$

⑤ $8 - 2\frac{1}{3}$

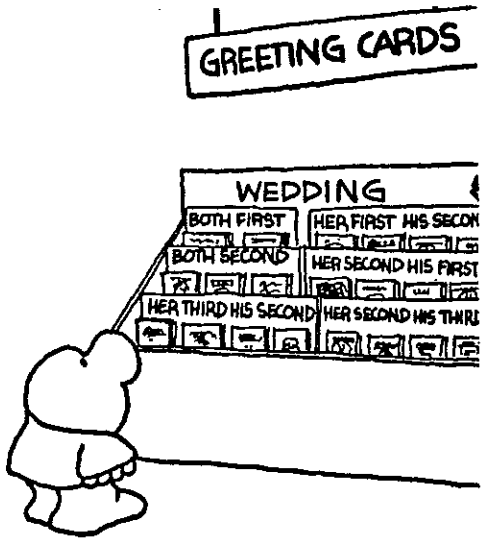
⑥ $15\frac{2}{7} - 3\frac{3}{4}$

⑦ $9\frac{1}{5} - 7\frac{1}{6}$

⑧ $12 - 3\frac{2}{5}$

⑨ $4\frac{2}{3} - 1\frac{5}{6}$

⑩ $3\frac{2}{9} - 1$



⑪ $4\frac{2}{3} - 2\frac{5}{6}$

⑫ $8\frac{1}{3} - 5\frac{4}{7}$

⑬ $5\frac{3}{8} - 5\frac{3}{8}$

⑭ $12 - 10\frac{2}{3}$

⑮ $6\frac{2}{3} - 4$

7. MULTIPLICATION

Find each product:

① $\frac{4}{7} \times \frac{3}{4}$

② $\frac{5}{8} \times \frac{10}{15}$

③ $2\frac{1}{2} \times \frac{3}{5}$

④ $6 \times \frac{2}{3}$

⑤ $8\frac{1}{2} \times 2$

⑥ $4\frac{2}{3} \times 1\frac{1}{2}$

⑦ $\frac{18}{25} \times \frac{10}{24}$

⑧ $6 \times 2\frac{3}{4}$

⑨ $\frac{22}{35} \times \frac{25}{33}$

⑩ $5 \times 3\frac{1}{3}$

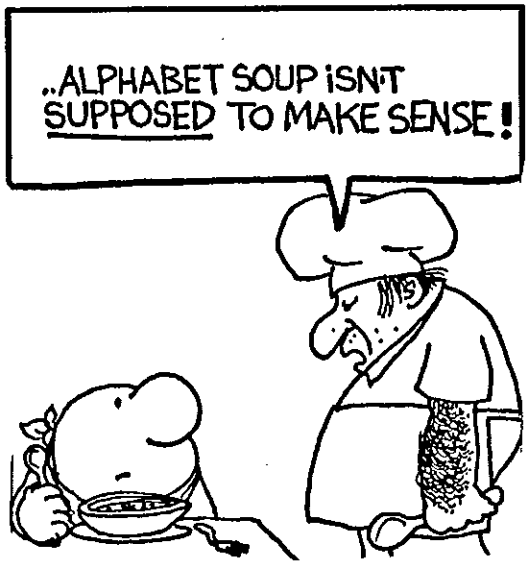
⑪ $16 \times \frac{3}{4}$

⑫ $2\frac{3}{8} \times \frac{10}{38}$

⑬ $\frac{4}{5} \times 1\frac{3}{4}$

⑭ $2\frac{6}{7} \times \frac{3}{40}$

⑮ $\frac{7}{8} \times 1\frac{1}{3}$



8. DIVISION

Find each quotient:

① $3 \div \frac{2}{5}$

② $4\frac{1}{2} \div \frac{2}{3}$

③ $\frac{15}{34} \div \frac{10}{17}$

④ $6\frac{1}{3} \div \frac{38}{6}$

⑤ $2\frac{2}{3} \div 6$

⑥ $8 \div \frac{1}{3}$

⑦ $2\frac{1}{2} \div 3\frac{1}{2}$

⑧ $\frac{2}{3} \div 1\frac{3}{4}$

⑨ $\frac{15}{22} \div \frac{3}{11}$

⑩ $5 \div 2\frac{1}{2}$

⑪ $6\frac{1}{2} \div \frac{1}{3}$

⑫ $\frac{3}{4} \div 9$

⑬ $\frac{5}{8} \div 4\frac{1}{5}$

⑭ $6 \div 2\frac{2}{3}$

⑮ $\frac{4}{7} \div \frac{12}{14}$

9. COMPLEX FRACTIONS

Simplify each complex fraction:

① $\dfrac{(\frac{3}{5})}{(\frac{2}{3})}$

② $\dfrac{(1\frac{3}{4})}{(\frac{5}{6})}$

③ $\dfrac{(12\frac{1}{2})}{(100)}$

④ $\dfrac{(33\frac{1}{3})}{(100)}$

⑤ $\dfrac{\left(2\frac{3}{4} \div 2\right)}{(3)}$

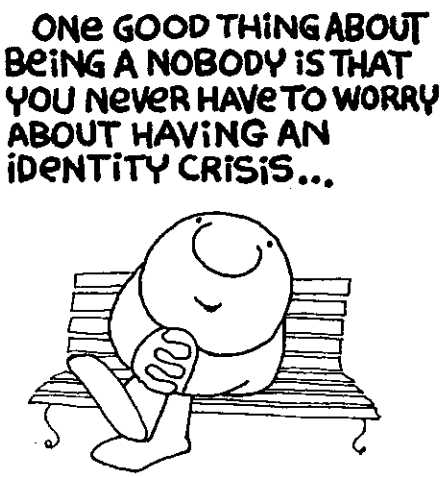
⑥ $\dfrac{\left(1\frac{3}{4} \div \frac{2}{3}\right)}{\left(\frac{1}{2}\right)}$

⑦ $\dfrac{(4)}{\left(\frac{2}{3} \div 1\frac{1}{2}\right)}$

⑧ $\dfrac{\left(\frac{2}{3}\right)}{\left(\frac{3}{5} \div 2\right)}$

⑨ $\dfrac{(2)}{\left(\frac{3}{4} \div \frac{1}{2}\right)}$

⑩ $\dfrac{\left(1\frac{1}{3} \div 3\right)}{\left(\frac{2}{3}\right)}$



10. PROBLEM SOLVING

① Mrs. Seda practiced playing the harp 5 ½, 3 ¾, 4 ¾, and 3 ½ hours last week. How many hours in all?

② There are 81 rabbits and 5/9 of them are white. How many rabbits are white?

③ There was 2/5 of a cake in the refrigerator. If 3 people cut equal portions and finish the cake, what fractional part will each eat?

④ There are 30 pencils. 4/5 are sharpened. How many are sharpened?

⑤ Barbara is working on a model. She completed 1/3 on Thursday and 1/4 on Friday. How much does she have left to complete?

⑥ Mr. Anderson can make 3 ½ dozen cookies from one recipe. How many dozen cookies can be made from 2 ½ recipes?

⑦ It takes a machine 2 ¼ minutes to complete a part at the factory. How many parts can it complete in 18 minutes?

⑧ Last month, Roberta practiced her gymnastic routine for 12 hours. Each session lasted 2/3 of an hour. How many sessions last month?

⑨ Eddie and Chris went to the ice cream parlor. Chris ate 1½ banana splits. Eddie ate ¾ of one. How much more did Chris eat?

⑩ Jefferson School has 1200 students. Exactly ⅕ wrote articles for the school newspaper. How many wrote articles?

⑪ How many 2½ hour movies can be shown by a TV station in 15 hours?

11. MORE PROBLEM SOLVING

① How many ⅓ of an hour periods are there in 24 hours?

② Lilly plans to make 12 pot holders to sell at the craft fair. She has already made 10 ⅔. How many more does she have to make?

③ A basket was ¾ full of fruit. ⅙ of the fruit was bruised. What fractional part of the basket contained bruised fruit?

④ There are 12 elected officers in the school council. ⅔ of the offices are held by girls. How many officers are girls?

⑤ The Kawasaki family raked leaves and filled 3½ bags. Two weekends later they filled 5 ⅓ bags. How many more bags did they fill the second time? How many in all?

⑥ ⅔ of a ¼-acre garden is planted with vegetables. What fraction of an acre was planted with vegetables?

⑦ Lester rode his bicycle 2½ hours on Saturday and 3¼ hours on Sunday. How many hours did he ride in all? How many more hours did he ride on Sunday?

⑧ Sharon can read 2 1/3 pages in one minute. How many pages can she read in 4 1/2 minutes?

⑨ How many 3/4-inch links does it take to make a 27-inch chain?

⑩ A clown suit for a puppet takes 1 1/2 yards of ribbon and the hat takes 3/4 yards. Is 2 1/2 yards of ribbon enough?

⑪ The trunk of a giant sequoia measures 102 feet around. How many people with arms out-stretched would it take to surround the tree if the average arm-span is 5 2/3 feet?

12. REVIEW

Reduce each fraction:

① $\frac{15}{18}$ ② $\frac{12}{36}$ ③ $\frac{24}{42}$ ④ $\frac{8}{9}$

Rename:

⑤ $3\frac{4}{7}$ ⑥ $2\frac{1}{2}$ ⑦ $6\frac{3}{4}$ ⑧ $\frac{12}{8}$ ⑨ $\frac{9}{3}$ ⑩ $\frac{14}{4}$

Equivalence:

⑪ $\frac{5}{8} = \frac{x}{24}$ ⑫ $\frac{6}{9} = \frac{x}{12}$ ⑬ $\frac{x}{30} = \frac{15}{18}$

Comparisons:

⑭ $\frac{4}{5} \square \frac{5}{6}$ ⑮ $\frac{2}{7} \square \frac{6}{21}$ ⑯ $3\frac{1}{2} \square \frac{9}{4}$

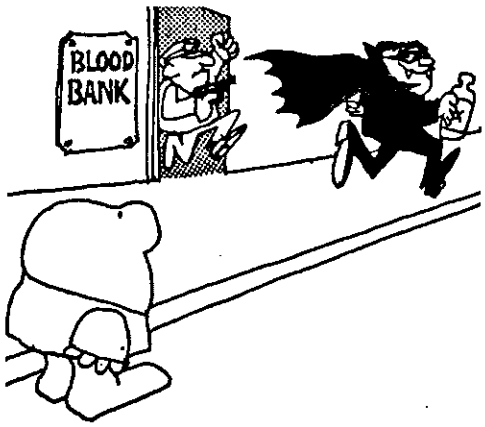
Operations:

⑰ $3\frac{1}{4} + 2\frac{3}{7}$ ⑱ $6\frac{3}{8} - 2\frac{2}{3}$ ⑲ $4 - 1\frac{3}{5}$ ⑳ $\frac{3}{5} \times 9$ ㉑ $2\frac{1}{3} \div 4$ ㉒ $7\frac{1}{2} \times \frac{2}{25}$ ㉓ $6 \div 2\frac{2}{3}$ ㉔ $\frac{4}{7} + 2\frac{1}{3} + \frac{5}{21}$

(25) $1\frac{3}{5} - \frac{5}{8}$

(26) $\frac{12}{25} \times \frac{35}{36}$

(27) $4\frac{1}{5} - 1\frac{3}{4}$



Complex fractions:

(28) $\dfrac{(62\frac{1}{2})}{(100)}$

(29) $\dfrac{(\frac{3}{4})}{(\frac{2}{3})}$

(30) $\dfrac{(\frac{1\frac{1}{3}}{\frac{2}{5}})}{(3)}$

(31) $\dfrac{(66\frac{2}{3})}{(100)}$

(32) $\dfrac{(\frac{4}{5})}{(\frac{2}{1\frac{1}{2}})}$

(33) $\dfrac{(1\frac{2}{5})}{(\frac{1\frac{1}{3}}{\frac{1}{6}})}$

Problem solving:

(34) 2/3 of a fence is left to be painted. 5 people paint equal amounts. What fractional part does each paint?

(35) 3/5 of the students went to the game. 2/3 of them wore school colors. What fraction wore school colors?

(36) Amy did 1/5 of the work Friday and 1/4 on Saturday. How much is left for Sunday?

(37) Jimmy reads 2 1/2 articles in 1 hour. How many articles can he read in 2 3/4 hours?

UNIT 3

Decimals

1. WRITE IN WORDS

① 2,100.35
② 400.027
③ 8.0046
④ 12.308

2. WRITE THE DECIMAL

① Nineteen, and fifty-eight thousandths

② Two hundred fifteen, and three hundred six thou-sandths

③ Eight thousand, thirty-five, and six hundred twenty-two ten thousandths

④ Forty-nine, and fifty-four hundred thousandths

⑤ Two hundred nine ten thousandths

3. COMPARISONS

① .83 □ .8
② .205 □ .21
③ .53 □ .525
④ 3.94 □ 2.98
⑤ 1.1 □ .94
⑥ .082 □ .29

4. PLACE VALUE

In 18.3069, what is the value of:

① 3
② 8
③ 9
④ 6
⑤ 0
⑥ 1

In 290.485, what is the value of:

⑦ 2
⑧ 4
⑨ 5
⑩ 0
⑪ 9
⑫ 8

5. EXPANDING

Expand using exponents:

① 24.35
② 800.0604
③ .2003
④ 8.1502
⑤ 3,000.25
⑥ 84.03
⑦ .0054
⑧ 20,500.08

6. ROUNDING

Round 45.0834 to:

① 1
② 1/100
③ 100
④ 1/10
⑤ 1/1000

Round .60408 to:

⑥ 1/10
⑦ 1/1000
⑧ 1
⑨ 1/10,000
⑩ 1/100

Round 3.8995 to:

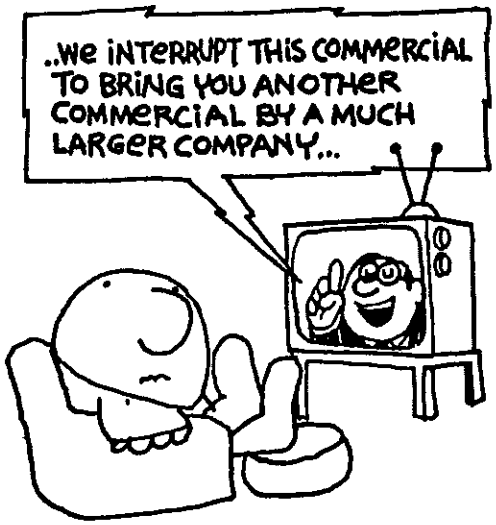
⑪ 1
⑫ 1/100
⑬ 1/1000
⑭ 1/10
⑮ 10

Round 400.9182 to:

⑯ $1/10^2$
⑰ $1/10^3$
⑱ 10^2
⑲ 10^3
⑳ 10^0

Round .3999 to:

㉑ 10^0
㉒ $1/10^3$
㉓ 1/10
㉔ $1/10^2$
㉕ $1/10^4$



7. ADDITION & SUBTRACTION

① .6 + 3.84 + .125
② 2.5 + .034 + 8
③ .143 + .02 + 5.1
④ 4.05 + .0834
⑤ 5.75 + .384 + 2.6
⑥ 221 + 3.056
⑦ .403 + 87
⑧ 4.35 − 2.1
⑨ 94.6 − 4.283
⑩ .653 − .07
⑪ .05 − .0029

⑫ 54 − .03

⑬ 12.56 − 12.056

⑭ .9 − .89

⑮ 10 − .341

8. MULTIPLICATION

Find each product:

① .618 × .24

② 38 × .015

③ 48.2 × .3

④ .014 × .08

⑤ .26 × 800

⑥ 13 × 1.25

⑦ .04 × 25.1

⑧ 3800 × 1.1

⑨ 485.2 × .003

⑩ 2.14 × 3.55

⑪ 4.05 × .0012

⑫ 28.9 × 5.3

⑬ .064 × .15

⑭ .0003 × .0003

⑮ 2.1 × .018

9. DIVISION

Find each quotient:

① 2.4 ÷ 1.5

② 3.45 ÷ .25

③ 40 ÷ 1.25

④ 9 ÷ .075

⑤ 2.55 ÷ 1.5

⑥ .09 ÷ 2.4

⑦ 2.6 ÷ .03

⑧ 5 ÷ 2.4

⑨ 5.4 ÷ .32

⑩ 600 ÷ 2.7

⑪ .5 ÷ .55

Round each quotient to:

⑫ $1/10^2$
8.5 ÷ 1.8

⑬ $1/10^2$
280 ÷ 15

⑭ $1/10$
5 ÷ 6

⑮ $1/10$
.07 ÷ .3

10. POWERS OF TEN

① 4.63×10^4

② $.375 \times 10^2$

③ $42.6 \div 10^2$

④ 3×10^3

⑤ $.004 \times 10^4$

⑥ $265.174 \div 10^2$

⑦ $.134 \div 10$
⑧ 2.34×10^0
⑨ 45.1×10^3
⑩ $1.18 \div 10^2$
⑪ $.16 \div 10^2$
⑫ 54.3×10^2
⑬ $54.3 \div 10^2$
⑭ $.111 \times 10^4$
⑮ $10{,}000 \div 10^4$

11. CONVERTING

Convert to fractions:

① .25
② .1
③ .15
④ .3
⑤ .11
⑥ 2.5
⑦ 3.65
⑧ .7
⑨ .75
⑩ 4
⑪ .025
⑫ .001
⑬ 38.6
⑭ .125
⑮ .05

Convert to decimals:

⑯ 7/10
⑰ 3/100
⑱ 12/100
⑲ 4/5
⑳ 1/3
㉑ 5/8
㉒ 4/9
㉓ 5/6
㉔ 1 1/2
㉕ $3\frac{2}{3}$
㉖ 3/11
㉗ $4\frac{1}{6}$
㉘ 8/9
㉙ 1/15
㉚ 17/20

12. REVIEW

Write in words:

① 3,005.041
② 400.0103
③ 6.2006

Write the standard decimal:

④ Three thousand fifteen, and six hundredths

⑤ Two hundred twelve, and five hundred thirty-six ten thousandths

⑥ Seven, and forty-two hundred thousandths

Compare:

⑦ .74 □ .7
⑧ .5 □ .483
⑨ 4.03 □ 4.1

Indicate the value of each of the following digits in the number 38.0641

⑩ 4
⑪ 6
⑫ 0

Expand using exponents:

(13) 16.2
(14) 300.204
(15) 1.0056
(16) 3,400.01
(17) .2008
(18) 2.10009

Round 85.9984 to:

(19) 1
(20) 100
(21) 1/10
(22) $1/10^3$
(23) 10
(24) $1/10^2$

Add / Subtract:

(25) .84 + 2.65 + 34
(26) 6.29 − 5.875
(27) 4 − 2.34
(28) 50 − .012

multiply / Divide:

(29) 2.1 × 3.45
(30) 45 ÷ 1.2
(31) .065 × .02
(32) .9 ÷ .54

Divide and round to 1/10:

(33) .4 ÷ .14

Powers of ten:

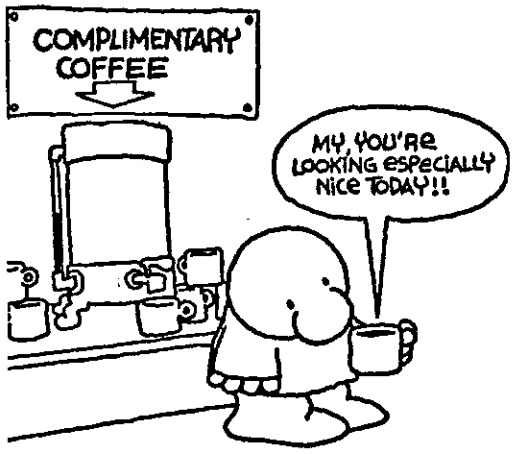
(34) 5.68×10^3
(35) $.0015 \div 10^2$
(36) $.043 \times 10^2$
(37) $125.1 \div 10^3$

Convert to fractions:

(38) .35
(39) 2.4

Convert to decimals:

(40) 7/9
(41) $1\ 4/5$



UNIT 4

Proportions & Percentages

1. PROPORTIONS

Solve each proportion and show all steps:

① $\frac{n}{5} = \frac{8}{10}$

② $\frac{3}{11} = \frac{12}{n}$

③ $\frac{9}{15} = \frac{n}{20}$

④ $\frac{2}{n} = \frac{5}{7}$

⑤ $\frac{11}{15} = \frac{n}{3}$

⑥ $\frac{4}{18} = \frac{3}{n}$

⑦ $\frac{1}{3} = \frac{5}{n}$

⑧ $\frac{4}{n} = \frac{7}{9}$

2. PERCENTAGES

Use a proportion to solve:

① What percent of 20 is 5?

② What is 8% of 50?

③ 8 is 40% of what?

④ 15% of 12 is what?

⑤ 14 is what percent of 28?

⑥ 12 is 20% of what?

⑦ 6 is what percent of 24?

⑧ 9 is 200% of what?

⑨ What is 300% of 21?

⑩ What percent of 45 is 18?

⑪ 36 is 75% of what?

⑫ 25% of 40 is what?

⑬ What percent of 75 is 15?

⑭ 1.5 is 20% of what?

⑮ 12 is what percent of 8?

⑯ $2\frac{1}{4}$% of what is 6.3?

⑰ What is .05% of 250?

⑱ What is 5% of 45?

⑲ 12 is 40% of what?

(20) 15% of 300 is what?

(21) 6% of what is 15?

(22) 5.2 is 8% of what?

(23) 5½% of 80 is what?

(24) 6 is what percent of 75?

(25) What is 12% of 90?

(26) What percent of 25 is 4?

(27) 15 is what percent of 12?

3. PROBLEM SOLVING

Use a proportion to solve. Be sure to use labels:

① 20 televisions. 12 are color. What percent color?

② 50 shirts. 30% white. How many are white?

③ $50 spent for food. This is 20% of income. Determine the income.

④ 25 games played. 80% won. How many games won? How many lost?

⑤ Joan received 360 votes in the election. This was 60% of the votes. How many people voted in the election?

⑥ 120 seats in the auditorium. 90 seats occupied. What percent occupied?

⑦ 30 ice cream flavors. 3 already sold out. What percent still available?

⑧ A student scored 80% on the test. She answered 16 questions correctly. How many questions were answered <u>in</u>correctly?

⑨ 300 citizens. 85% voted. How many did <u>not</u> vote?

⑩ 125 workers on the night shift. This is 20% of the total workers. How many

workers are on the day shift?

(11) 14 trees cut for Christmas. This is 56% of the total. How many trees in all?

(12) 30 students are assigned to Room 202. 10% are absent. How many present?

(13) 225 items on sale. This is 30% of the total. How many items in all?

(14) 24 cans. 6 are dented. What percent not dented?

(15) 26 students are absent. This is 5% of the school's enrollment. What is the enrollment?

(16) 150 coats. 60% have zippers. How many do not have zippers?

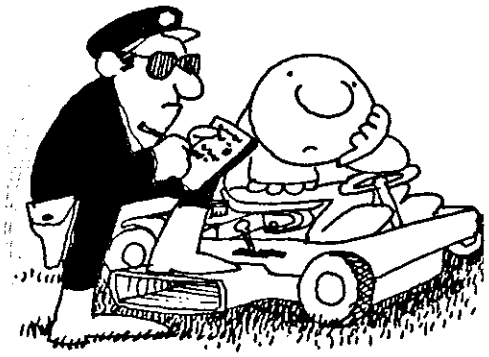
(17) 27 tickets sold. This was 90% of the total. How many tickets left to be sold?

(18) 30 students. 12 wear glasses. What percent wear glasses?

(19) The theatre has 550 seats. 64% are empty. How many people are in the theatre?

(20) Won 16 games. This was 80% of the total played. How many games lost?

(21) The capacity of the auditorium is 800. $37\frac{1}{2}$% of the seats are empty. How many people are in the auditorium?



4. RATE OF DISCOUNT

Use a proportion to solve. Be sure to use labels:

(1) $8.40 regular price. 15% discount. Determine the amount of discount.

(2) $22.50 regular price. $33\frac{1}{3}$% discount. Determine the selling price.

③ Was $195. Now $156. Determine the rate of discount.

④ $4 discount. 12½% discount. Determine the regular price.

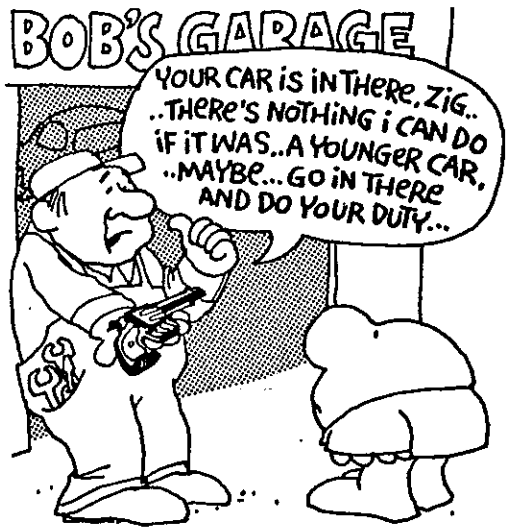
⑤ $39.86 regular price. 15% discount. Determine the amount of discount.

⑥ $2,715 regular price. 30% discount. Determine the selling price.

⑦ $50 regular price. $40 selling price. Determine the rate of discount.

⑧ $187.50 regular price. $125 selling price. Determine the rate of discount.

⑨ $998 regular price. 40% discount. Determine the selling price.



⑩ A coat originally selling for $65 was sold at 20% off. Determine the selling price.

⑪ A pair of shoes originally selling for $24 is on sale for $20. Determine the rate of discount.

⑫ A television originally selling for $395 is on sale at 15% off. Determine the amount of discount.

⑬ Original price for a tape deck was $80. Determine the amount of discount if it is purchased at 15% off.

⑭ $99 was the original price for a TV set. Determine the selling price after a 40% discount.

⑮ The regular price for a casette tape is $3.98. Determine the selling price at 10% off.

⑯ There is a 20% discount on a $4.25 record. Determine the amount of discount.

⑰ A backpack is listed at $10.80 but sells for $8.10. Determine the rate of discount.

(18) Was $297. Now $198. Determine the rate of discount.

(19) A knit suit is regularly $165. At 15% off, determine the selling price.

(20) If you purchase a pair of $20 slacks for $14, what is the rate of discount?

(21) A $675 sofa has an advertised discount of 33 1/3 %. How much money will you save?

5. EQUIVALENCE

Complete the chart:

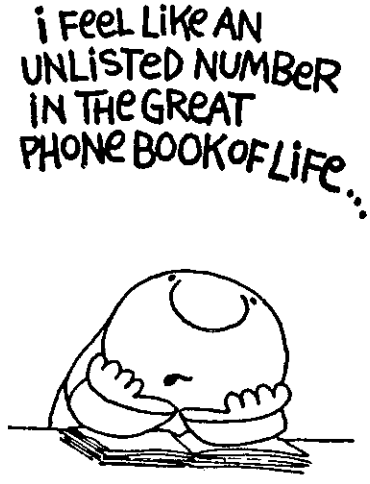
	FRACTION	DECIMAL	PERCENT
(1)	5/8		
(2)		.8	
(3)			35 %
(4)	4/9		
(5)		.06	
(6)			340 %
(7)	5/6		
(8)		.875	
(9)			$16.\overline{6}$ %
(10)	7/11		
(11)		.002	
(12)			5%
(13)	1/4		
(14)		$.\overline{27}$	
(15)			12 1/2 %
(16)	7/8		
(17)		.275	
(18)			12 %
(19)	5/11		
(20)			$83.\overline{3}$ %
(21)		.0012	
(22)			3/4 %
(23)	2 1/3		
(24)		6.1	
(25)		$.\overline{4}$	

Convert:

(26) 6 1/4 % = fraction

(27) 2.5 = percent

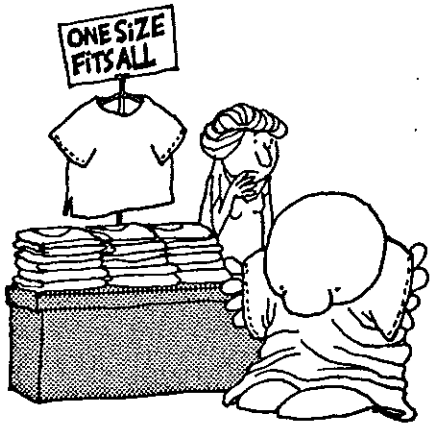
(28) 5/12 = percent



6. REPEATING DECIMALS

Convert to fractions:

① $.\overline{7}$	⑥ $.2\overline{1}$	⑪ $.\overline{36}$
② $.\overline{05}$	⑦ $.0\overline{45}$	⑫ $.11\overline{2}$
③ $.\overline{21}$	⑧ $.0\overline{3}$	⑬ $.\overline{105}$
④ $.\overline{575}$	⑨ $.\overline{25}$	⑭ $.3\overline{4}$
⑤ $.\overline{03}$	⑩ $.00\overline{5}$	⑮ $.0\overline{25}$



7. REVIEW

① $\frac{9}{x} = \frac{12}{20}$

② 3 is 20% of what?

③ 25 is what percent of 40?

④ What is 8% of 60?

⑤ What percent of 9 is 5?

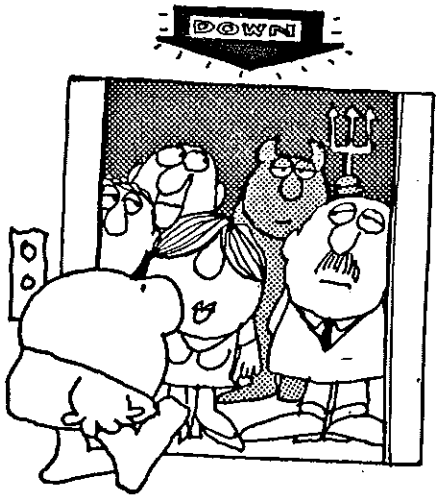
⑥ There are 60 questions on the test. 75% are answered correctly. How many items missed?

⑦ 6 boys came to the party. This is $66\frac{2}{3}$% of the children at the party. How many children were at the party?

⑧ 36 students are assigned to Mr. Boynton's homeroom. Of the 36, 9 are absent and 3 are at a student senate meeting. What percent are present in class?

⑨ 10% discount. $5 discount. What is the selling price?

⑩ A radio originally selling for $12 is on sale with an 8% discount. What is the amount of discount?



(11) Original price $12. Selling price $10.50. Determine the rate of discount.

Complete the chart:

	FRACTION	DECIMAL	PERCENT
(12)	4/5		
(13)		$.1\overline{6}$	
(14)			6%
(15)		.375	
(16)	3/11		

Convert:

(17) ½% = fraction

(18) 5/8 = percent

(19) change $.\overline{25}$ to a fraction

(20) change $.0\overline{8}$ to a fraction

QUARTER 1

Cumulative Review

REVIEW #1

In 683.025, indicate the value of:

① 5 ② 0

Round 58,439.9641 to:

③ 1000 ⑥ 1/100
④ $1/10^3$ ⑦ 1/10
⑤ 10^5 ⑧ 1

Exponents:

⑨ 5^3 ⑪ 10^4
⑩ 4^0 ⑫ 3^3

Expand using exponents:

⑬ 30,050.04 ⑭ 50,800.003

Rename division (two answers):

⑮ $3\overline{)7}$ ⑯ 4/5

Primes / Composites:

⑰ List primes (15 to 30)
⑱ List composites (30 to 40)

Prime factorization:

⑲ 280 ⑳ 1200

Factors / Multiples:

㉑ Factors of 28
㉒ First five multiples of 18

GCF / LCM:

㉓ GCF 45, 30 ㉔ LCM 45, 30

Equivalence:

㉕ $\frac{7}{n} = \frac{21}{30}$ ㉖ $\frac{12}{15} = \frac{8}{n}$

Rename mixed numerals and improper fractions:

(27) $14/6$ (29) $3\frac{2}{5}$

(28) $12/8$ (30) $5\frac{1}{3}$

Compare:

(31) $\frac{5}{8} \square \frac{3}{5}$ (32) $2\frac{1}{3} \square \frac{9}{4}$

Fraction operations:

(33) $\frac{4}{9} + 3\frac{2}{3} + \frac{1}{6}$

(34) $4\frac{2}{5} + 3\frac{6}{7}$

(35) $8 - 2\frac{3}{5}$

(36) $4\frac{2}{7} - 2\frac{1}{2}$

(37) $16/25 \times 15/24$

(38) $2\frac{1}{4} \times 12$

(39) $3 \div 2\frac{3}{4}$

(40) $1\frac{5}{6} \div 11/12$

Complex fractions:

(41) $\dfrac{(\frac{3}{5})}{(\frac{1}{3})}$ (42) $\dfrac{(2\frac{1}{2})}{(\frac{\frac{1}{3}}{1\frac{1}{3}})}$

Write in words:

(43) 46,017.053 (44) 208,040.37

Compare:

(45) .46 □ .449 (46) 3.45 □ 2.51

Decimal operations:

(47) $.3 + 2.6 + .004$

(48) $6 - 2.51$

(49) $2.6 \times .007$

(50) $.03 \times .114$

(51) $.14 \div 2.5$

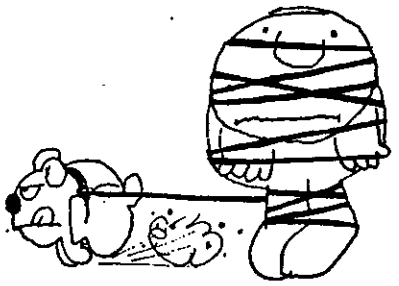
(52) $.5 \div .36$

(53) Round to $1/10^2$ $7 \div .6$

(54) Round to $1/10^2$ $.25 \div .3$

Powers of ten:

(55) $3.65 \div 10^2$ (56) 3.74×10^3



Convert:

(57) 2.3 = fraction

(58) $16.\overline{6}\%$ = fraction

(59) 7/9 = percent

(60) $2\frac{3}{4}$ = percent

(61) .045 = percent

(62) .125 = percent

(63) 3/8 = decimal

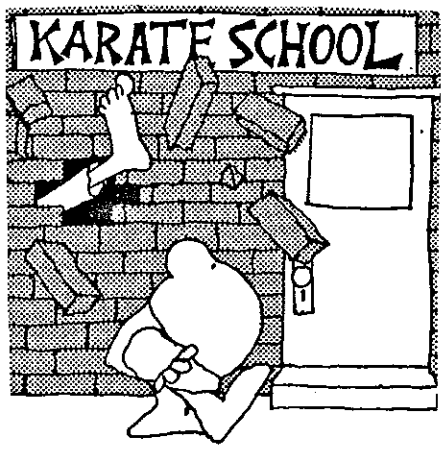
(64) 4/11 = decimal

Change repeating decimals to fractions:

(65) $.2\overline{3}$ (66) $.\overline{15}$

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

(67) 58,425 (68) 3,000



Problem solving:

(69) 90 questions on the test. 90% answered correctly. How many incorrect?

(70) 14 books need new bindings. This is 5% of the total. How many total books?

(71) What is 20% of 85?

(72) 15 is 4% of what?

(73) What percent of 11 is 8?

(74) What is 9% of 20?

(75) 3/5 of the players are right handed. There are 35 players. How many righties?

(76) 1/5 of the work is completed the first day. 2/3 is completed the second day. How much is left?

(77) $12 regular price. 8% discount. Determine the purchase price.

(78) $28 regular price. $21 purchase price. Determine the rate of discount.

REVIEW #2

In 389,460.57, indicate the value of:

(1) 8 (2) 7

Round 684.79925 to:

(3) 10^2 (6) 10^3

(4) $1/10^2$ (7) 1

(5) 1/1000 (8) 1/10

Exponents:

(9) 3^5 (11) 10^5

(10) 7^0 (12) 4^3

Expand using exponents:

(13) 570.634 (14) 9000.009

Rename division (two ans.)

(15) $4/7$ (16) $5 \div 9$

Primes / Composites:

(17) List primes (7 to 18)

(18) List composites (20 to 30)

Prime factorization:

(19) 500 (20) 720

Factors / Multiples:

(21) Factors of 30

(22) First five multiples of 7

GCF / LCM:

(23) GCF 12, 18 (24) LCM 12, 18

Equivalence:

(25) $\frac{6}{n} = \frac{9}{12}$ (26) $\frac{5}{12} = \frac{20}{n}$

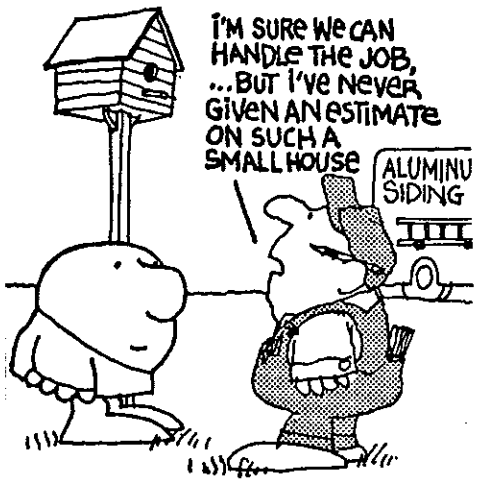
Rename mixed numerals and improper fractions:

(27) $24/8$ (29) $5\ 2/7$

(28) $18/4$ (30) $4\ 1/6$

Compare:

(31) $3\frac{2}{5} \square \frac{13}{3}$ (32) $\frac{4}{7} \square \frac{5}{9}$



Fraction operations:

(33) $4\frac{3}{5} + 2\frac{5}{8}$ (37) $6 \times 3\ 3/3$

(34) $2\frac{1}{4} + 4\frac{5}{6}$ (38) $2\frac{1}{3} \times 1\ 1/2$

(35) $6 - 3\frac{2}{9}$ (39) $1\frac{1}{3} \div 6$

(36) $4\frac{1}{2} - 2\frac{3}{5}$ (40) $\frac{3}{8} \div \frac{15}{16}$

Complex fractions:

(41) $\dfrac{\left(\frac{1}{3}\right)}{\left(1\frac{1}{2}\right)}$ (42) $\dfrac{(2)}{\left(\frac{\frac{1}{2}}{1\frac{1}{2}}\right)}$

Write in words:

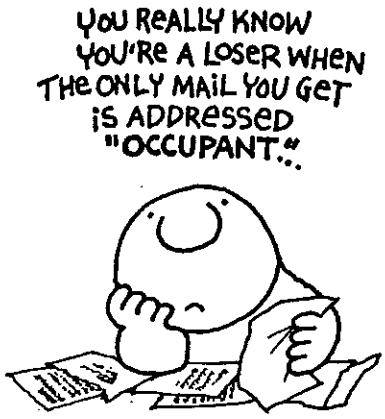
(43) 5,003,014.0016

(44) 2,100,054.005

Compare:

(45) 4.37 □ 4.4

(46) 2.006 □ 2.01



Decimal operations:

(47) 45 + .06 + 3.754

(48) 8.1 − 3.05

(49) .09 × 1.15

(50) 2.3 × .006

(51) 6.2 ÷ 9

(52) 5.5 ÷ .003

(53) Round to 1/10 $9 \div .63$

(54) Round to $1/10^2$ $.5 \div 3.1$

Powers of ten:

(55) $3.4 \div 10^2$ (56) $.65 \times 10^3$

Convert:

(57) 1.4 = fraction

(58) 2.5% = fraction

(59) 2 ½ = percent

(60) 5/11 = percent

(61) .375 = percent

(62) .005 = percent

(63) 4/5 = decimal

(64) 5/6 = decimal

Change repeating decimals to Fractions:

(65) $.\overline{45}$ (66) $.0\overline{6}$

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

(67) 48,290 (68) 12,348

Problem Solving:

(69) 170 students go to Madison School. On Monday, 17 are absent. What percent are present?

(70) There are 117 fiction books on the shelves. This is 6.5% of the total books. How many

non-fiction books are on the shelves?

(71) What is 5.5 % of 18?

(72) 13 is what percent of 40?

(73) 14 is 175% of what?

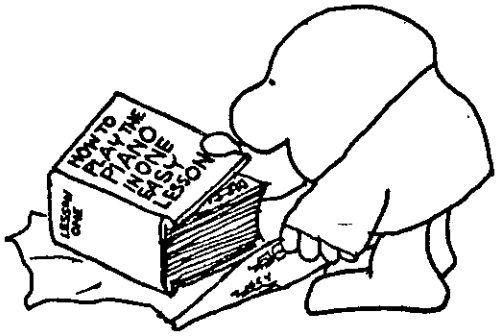
(74) What is $6\frac{1}{2}$ % of 80?

(75) It takes Alan $1\frac{1}{4}$ hours to mow a lawn. If he has to add gas to the mower every 10 hours, how many lawns can he finish before adding gas?

(76) There is 3 hours of work to do. 2/3 of the work is outside. How much time will be spent outside?

(77) $4 discount. 8% discount. Determine the selling price.

(78) Regular price is $200. Discount is 4 1/2 %. What is the new selling price?



PRACTICE TEST

(1) $5^3 =$ $10^5 =$

(2) Rename division (two ans.)
$5\overline{)7} =$

(3) List primes (10 to 18)

(4) Prime factorization of 144

(5) List factors of 24

(6) List the first five multiples of 13

(7) GCF of 12 and 20

(8) LCM of 12 and 20

(9) 14/8 = mix. numeral (reduced)

(10) $4\frac{2}{5}$ = improper fraction

(11) Solve for n:

$$\frac{8}{12} = \frac{14}{n}$$

(12) Compare:

$3\frac{2}{3} \square \frac{13}{4}$

Fraction operations:

(13) $3\frac{1}{2} + 6\frac{5}{7}$

(14) $6\frac{2}{5} - 1\frac{3}{4}$

(15) $\frac{12}{25} \times \frac{20}{24}$

(16) $\frac{3}{8} \div 2\frac{1}{4}$

(17) Simplify:

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

(18) What is the valve of "4" in 63.1548 ?

Round 689.9845 to:

(19) 1 (20) 1/10 (21) $1/10^3$

(22) Expand 1200.005 using exponents

(23) Compare 3.15 □ 3.097

Decimal operations:

(24) 4.5 + 28 + .129

(25) 5 − 2.78

(26) .12 × .013

(27) .25 ÷ .3

(28) Divide and round to $1/10^2$
.37 ÷ 2.1

(29) Powers of ten:
$4.6 \div 10^3$

(30) Divisibility (2, 5, 10, 3, 4, 6, 9):
25,371

(31) 1/6 = decimal, percent

(32) .015 = fraction, percent

(33) .2% = decimal, fraction

(34) Change the repeating decimal $.1\overline{3}$ to a fraction

(35) What percent of 30 is 12 ?

(36) 12 is 5% of what ?

(37) 3 students in a class of 24 were absent. What percent were absent ?

(38) 12 girls are 60% of the class. How many boys ?

(39) 35 cars in the lot. 2/5 are new. How many new cars ?

(40) Discount is 15%. Discount is $3. Determine the selling price.

REMEDIATION

① $3^3 =$ $2^5 =$ $4^\circ =$

② $\sqrt{4}{9} =$ ___ ÷ ___ , fraction

3/8 = ___ √ ___ , ___ ÷ ___

③ Primes (18 to 25)
Composites (8 to 14)
Primes (30 to 35)

④ Prime factorization of:
200 175 90

⑤ Factors of: 18 28 30

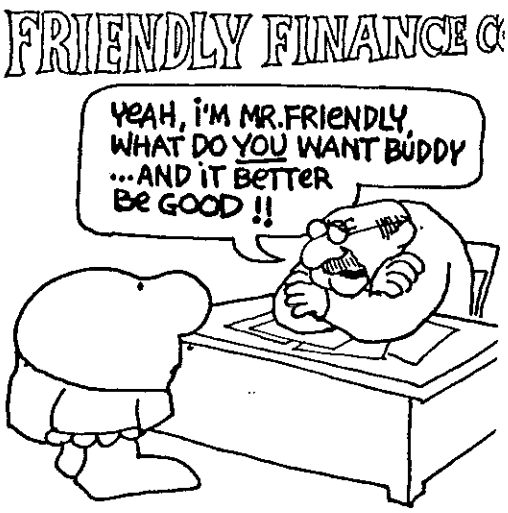
⑥ List the first five multiples of: 7 11 21

⑦ GCF of: 15, 25 21, 28 16, 32

⑧ LCM of: 15, 25 9, 18 20, 25

⑨ Rename: 16/12 15/10 10/6

⑩ Rename: $2\frac{1}{3}$ $4\frac{2}{5}$ $3\frac{1}{9}$



⑪ Solve for n:

$\frac{6}{8} = \frac{n}{20}$ $\frac{6}{n} = \frac{9}{15}$ $\frac{4}{12} = \frac{7}{n}$

⑫ Compare:

$2\frac{2}{3} \square \frac{9}{4}$ $\frac{12}{5} \square 2\frac{1}{2}$ $4\frac{3}{4} \square \frac{13}{3}$

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

⑭ $8\frac{1}{4} - 1\frac{2}{3}$ $6 - 3\frac{2}{7}$ $4\frac{1}{2} - 1\frac{4}{5}$

⑮ $\frac{10}{11} \times \frac{22}{25}$ $\frac{4}{15} \times \frac{10}{16}$ $\frac{13}{24} \times \frac{12}{39}$

⑯ $\frac{4}{5} \div 1\frac{1}{2}$ $8 \div 1\frac{3}{4}$ $1\frac{2}{3} \div 4$

⑰ $\dfrac{\left(\frac{1}{2}\right)}{\left(\frac{1\frac{1}{3}}{2}\right)}$ $\dfrac{\left(\frac{1\frac{1}{2}}{\frac{2}{3}}\right)}{(6)}$ $\dfrac{\left(\frac{\frac{1}{4}}{8}\right)}{\left(\frac{3}{4}\right)}$

⑱ Indicate the value of "7"

64.0375 48.729 6.1357

⑲ ⑳ ㉑ Round 698.9935 to:

1 $\frac{1}{10^2}$ 10^2 10^3

10 $\frac{1}{10^3}$ $\frac{1}{10^4}$ $\frac{1}{10}$

㉒ Expand using exponents:

40.205 1000.051 200.0403

㉓ Compare:

4,096 □ 4.0912

53.8 □ 53.795

2.045 □ 2.13

(24) 5.3 + .023 + 16
8.34 + 12 + 1.005
.24 + 9,165 + 8

(25) 7 − 3.41 6.1 − 2.75 8 − 1.23

(26) .13 × .012 .06 × .14 .18 × .009

(27) .35 ÷ .6 4.1 ÷ .03 8 ÷ .9

(28) Divide and round to $1/10^2$
.29 ÷ 1.2 1.4 ÷ .03 8.3 ÷ .3

(29) Powers of ten:
4.25×10^3 $32.6 \div 10^2$ $.05 \times 10^4$

(30) Divisibility (2, 5, 10, 3, 4, 6, 9):
84,265 12,366 49,221

(31) 2/5 = decimal, percent
5/6 = decimal, percent

(32) .65 = fraction, percent
.008 = fraction, percent

(33) 4% = decimal, fraction
.5% = decimal, fraction

(34) Change a repeating decimal to a fraction:
$.0\overline{8}$ $.\overline{21}$ $.2\overline{4}$

(35) (36) What percent of 40 is 12?
What is 9% of 25?
8 is 4% of what?

(37) (38) There are 8 nickels in the coin box. This is $12\frac{1}{2}$% of the coins. How many coins are not nickels?

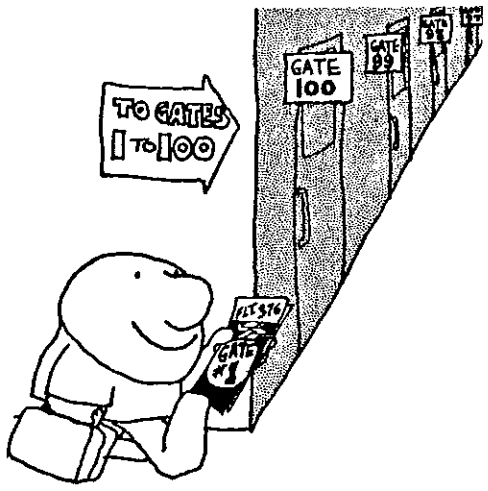
Four essays out of twenty received an "A." What percent received lower than "A"?

(39) There is 4/5 of a cake. If 6 people share it equally, what fraction will each have?

2/3 of the students passed the test. 1/4 of these received an "A." What fraction received an "A"?

(40) Discount is 12%. $3 discount. What is the selling price?

The original price is $80. The selling price is $56. What is the rate of discount?



MATH VOCABULARY (First Quarter)

Addend	A number added to another number
Coefficient	A value used as a multiplier for a variable
Complex Fraction	A fraction containing another fraction in its numerator or denominator
Composite Number	A number with factors other than one and itself
Denominator	Bottom value in a fraction (represents the whole in a ratio)
Difference	Solution to a subtraction problem
Discount	Money subtracted from the original price of an item on sale
Dividend	Number divided by another number (inside bracket, left of sign, numerator)
Divisor	Number that divides into another (outside bracket, right of sign, denominator)
Equivalent	Having equal measures
Even Number	Any number divisible evenly by 2 (has a units digit of 0, 2, 4, 6, or 8)
Exponent (Power)	Value indicating how many times the base number is used as a factor
Factor	Number that can be divided evenly into another number
Greatest Common Factor	The largest number that divides evenly into two or more given numbers
Improper Fraction	Fraction with numerator larger than denominator
Least Common Multiple	The smallest number that the original numbers can divide into evenly
Minuend	Number from which another is subtracted (top number in subtraction problem)
Mixed Numeral	Value expressed by a whole number and a fraction
Multiple	Number divisible evenly by the original number
Numerator	Top value in a fraction (represents part of a whole in a ratio)
Odd Number	Every other number starting with 1 (has units digit of 1, 3, 5, 7, or 9)
Original Price	The beginning price of an item before a discount is subtracted
Percent	Ratio with 100 as the bottom term (part out of 100)
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
Purchase Price	Price of an item after the discount has been subtracted
Quotient	Solution to a division problem
Rate of Discount	Percent of the original price deducted to determine the selling price
Ratio	Indicates part of a whole - fractional value
Reciprocal	Value which multiplied by the original gives a product of 1 (mult. inverse)
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
Selling Price	Price of an item after discount is subtracted (purchase price)
Subtrahend	A number subtracted from another number (bottom number in subtraction)
Sum	Solution to an addition problem
Terminating Decimal	Decimal value with a definite number of digits
Variable	Letters or symbols representing values in an expression