Arithmetic − **Sheet #4**

Do it in your head

1) $6.39 \div 1000$

2) $7.307 \cdot 100$

3) 9000^2

4) $13 \cdot 4$

5) $25 \cdot 4$

6) $16 \cdot 3$

7) $15 \cdot 4$

8) 3^4

9) 2^6

10) 5^3

11) $18000 \div 2000$

12) $(10.3)^2$

13) $350 \div 560$

14) $235,000 \cdot 4$

15) $8043 - 2987$

16) $8 \cdot 99999$

17) $15 \cdot 999$

18) $6200 \cdot 5$

19) $740 \div 5$

20) $45 \div 54$

21) $21 - 3.1$

22) $0.03 \div 0.0006$

Divisibility.

23) State whether each number is evenly divisible by anything from 2 to 12 (but not 7).

a) 40,832

b) 1,062,882

24) Give the prime factorization.

a) 270,000

b) 1,062,882

Division. Leave your answers as mixed numbers. Use short division for single digit divisors.

25) $45277 \div 6$

26) $374000 \div 42$

27) $387031 \div 5823$

Ratios, Part I − **Sheet #1**

1) Find the ratio of *milk to water*.

a) 4 cups of milk and 6 cups of water.

b) 6 cups of milk and 4 cups of water.

c) 6 cups of water and 4 cups of milk.

d) 2 quarts of milk and 3 pints of water.

e) 2 quarts of water and 28 fl. oz. of milk.

f) 240 m*l* of milk and 180 m*l* of water.

2) What is the ratio of Jane's to Larry's to Kevin's money if they have $240, $320, and $440, respectively?

3) For each problem, give the ratio of *Bill to Mary*.

a) What is the ratio of their weights if Bill weighs 160 pounds and Mary weighs 140 pounds?

b) What would the ratio of their weights be if they were weighed in kilograms?

c) What is the ratio of their heights if Bill is 5'4" tall and Mary is 5'8" tall?

d) What would the ratio of their heights be if they were measured in meters?

e) What is the ratio of their salaries if Bill gets paid $10/hr and Mary gets paid $300/week. (Both of them work 40 hours per week.)

4) Which of the following classes at Eastman Elementary School have equal ratios of *boys to girls*?

- First grade has 18 boys and 12 girls.

- Second grade has 10 boys and 8 girls.

- Third grade has 15 girls and 12 boys.

- Fourth grade has 12 girls and 15 boys.

- Fifth grade has 13 boys and 9 girls.

- Sixth grade has 15 boys and 10 girls.

1) Find X and Y given that the two figures are similar.
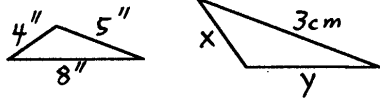
2) Barry has $21.00 and Ned has $21.60. Give the ratio of Barry's money to Ned's money…
   a) In whole number form.

   b) In decimal form.

3) Give the reciprocal of each ratio.
   a) B:G = 11:5

   b) H:D = 3:13

   c) R:W = 0.9:1

   d) X:Y = 3.6:1

4) Convert this ratio to decimal form.
   B:G = 13:4

5) Convert this ratio to whole number form.
   H:D = 2.125:1

6) A gallon of milk is poured into three pitchers such that the ratio of their volumes is 3:5:8. How much milk is in each pitcher (in fl.oz.)?

7) How can $550 be split between four people in a ratio of 5:3:2:1?

8) The length of a shadow of a tree is 25 feet. A 4½-foot pole next to it has a shadow 2½ feet long. How tall is the tree?

9) Write the four ways to express the ratio of this rectangle's dimensions.
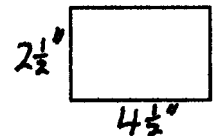
Percents – **Sheet #6**

1) Find each answer by using the easiest method possible. Show work on a separate sheet for those problems that can't be done in your head.

a) What is 25% of 140?

b) What is 80% of 450?

c) What is 15% of 220?

d) What is 1% of 741?

e) What is 33⅓% of 1200?

f) What is 83⅓% of 12,000?

g) What is 160% of 25?

h) What is 0.02% of 3000?

i) 8 is what percent of 16?

j) 8 is what percent of 160?

k) 70 is what percent of 210?

l) 31 is what percent of 310?

m) 14 is what percent of 150?

n) 14 is what percent of 16?

o) 71 is 10% of what number?

p) 40 is 20% of what number?

q) 300 is 66⅔% of what number?

r) 78 is 17% of what number?

s) 5022 is 81% of what number?

2) Quickly Estimate.
a) What is 71% of 245?

b) What is 9% of 5630?

c) What is 43% of 7?

d) 19 is what percent of 82?

e) 63 is what percent of 130?

f) 8567 is what percent of 9100?

3) What do you end up with if you increase 55 by 40%, and then decrease that result by 40%?
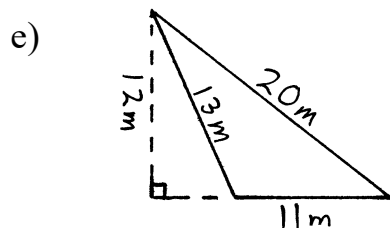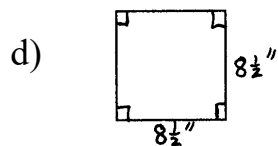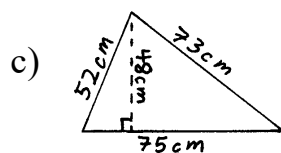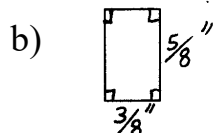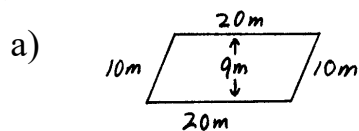
4) Increase and decrease.
a) Going from 5200 up to 6500 is what percentage increase?

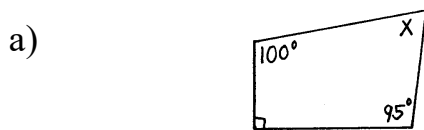b) Going from 6500 down to 5200 is what percentage decrease?

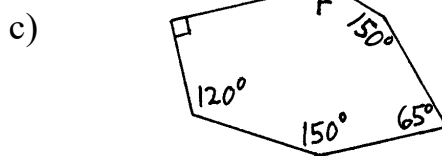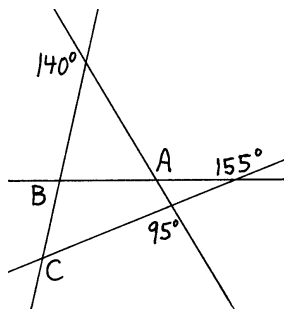c) Why were the answers to the above two problems different?

Geometry − Sheet #5

1) Find the area.

a)

20m

10m 9m 10m

20m

b)

5/8"

3/8"

c)

52cm 73cm

56cm

75cm

d)

8½"

8½"

e)

12m 13m 20m

11m

2) Find the variables.

a)

100° X

95°

b) *Challenge!*

140°

A 155°

B

95°

C

c)

F 150°

120°

150° 65°

3) What is the measure of the interior angles of a regular hexagon?

4) Calculate the value for X.

a)

32" 126"

X

b)

39' 89'

X
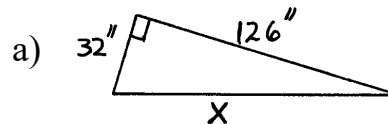
Algebra − **Sheet #8**

Signed Numbers
Simplify.

1) −8 − 3

2) 34 − 42

3) (4)(−7)

4) (−8)(−3)

5) (40)÷(−4)

6) (−20)÷(−5)

7) $\frac{-20}{-5}$

8) $6 \cdot \frac{7}{-15}$

9) $\left(-\frac{4}{5}\right) \cdot \left(-\frac{5}{6}\right)$

10) −7 − −10

11) −6 + 9 + 4 − 7

12) −2 − −7 + −8

Solving Equations
Solve each equation by getting X alone. Show what is done to each side. Check that your answers are correct.

13) −5X = −40

14) X + 7 = −2

15) 6X = −42

16) X÷4 = 8

17) $\frac{X}{4} = 8$

18) 7X − 21 = 3X − 9

19) 8X + 3 − 5X = 7 − 4X − 32

20) X − 8 − 6X = −7 + X −3

21) 6X − 7 = 2X − 10

22) *Challenge!*
$\frac{1}{6}X + \frac{2}{3} - \frac{3}{4}X = -\frac{7}{10} + \frac{2}{3}X - \frac{2}{5}$

23) *Challenge!*
$7X + 4 - X - 8 - 11X - 14 = -12 + 49X + 23 - 11 - 52X$

24) *Challenge!*
$-X - 2\frac{2}{3} - 12X + 13 + 5X - 5\frac{1}{2} = 13\frac{2}{3}X + 5 - \frac{3}{4}X - 21\frac{1}{6} - 17\frac{5}{12}X$