Incoming 7's Summer Math

Middle School Students,

As you leave for your summer vacation we want to emphasize that the math review packets you are receiving should **not be started until** early August. We are giving these out prior to this time because we know some of you go away and you might need to take them with you. We would like this work to be a way for you to review the math you learned last year before coming back to school. In other words, we want this work to be like warming up right before you go out to play a sport.

The work will also be available on the GA website as of August 15th.   If you are not going to be home you can go to any place that has internet access and print out a copy of the work. This book is designed for you complete in a two-week period, working approximately 15-20 minutes per day. The answers are in the back. We would like you to check your answers as you progress through the workbook in order to ensure that you are doing the work correctly.

Your teachers will collect your packets the first day of classes. Please make sure that you bring them to school on the first day of classes.

Don't forget. Math is life. If you pay attention, you will see it all around you.
Have a great summer!

Greenwich Academy Mathematics Department

Summer Math (7)

Worksheet 1 – Order of Operations

Name_____ Date_____

Evaluate each of the following.

1) $(5)(12)$

2) $\dfrac{1431}{9}$

3) 2^5

4) 5^2

5) $(25)(3)(4)$

6) $216 \div 12$

Using the order of operations (PEMDAS) evaluate the following expressions.

7) $3 + 8 \div 4$

8) $1 + 5^2$

9) $11 - (4 + 3)$

10) $9 \cdot (5 + 1)$

11) $4 \cdot 6 \div 2^3$

12) $8 \div 2 \cdot 4$

13) $96 \div 3 - 2 \times 7$

14) $\left[5 \cdot (2+2)\right] + 3 - 11$

BONUS: Cut the grid apart and randomly reassemble the pieces so that the answers touch the problem.

7 6 47 6 (3)/4 - 1	2÷4(6)-7 64 43 4+6(3+2)-1	30 4(3)+5(2) 6(7)+5(4)	7+4-3+1 34 5(7+6+8)
7(12-4) 50 96	25-(17-4) 6/2+5(4)	23 18-(8+4) 9	7+3(4+8) 5(4)(3)+6(6) 6(5)+4(9-2)
4 5+3(7) 13	16 58	26 8+9(2)+4	105 21+4(9)-7
(21+18)/3 9(7)-2(8) 22 19	1 5(4)+2(1+6) (7+9)4 56	62 33 24-4(2)	12 4+(4-4) 6/2+8/2

Summer Math (7)

Worksheet 2 – Signed Number Arithmetic

Name_____ Date_____

Perform the following integer operations.

1) $-5+3$ 2) $9-(-3)$

3) $8-14$ 4) $-1-(-7)$

5) $(-3)(-11)$ 6) $16 \div (-4)$

7) $(-21) \div (-7)$ 8) $5 \cdot (-8)$

9) $-4+3-9-2$

10) $-3 \cdot 4 \cdot -1$

11) $\dfrac{-212}{-4}$

12) $\dfrac{12(-6)}{2(4)}$

BONUS:

1) Three ducks and two ducklings weigh 32 kg. Four ducks and three ducklings weigh 44kg. All ducks weigh the same and all ducklings weigh the same. What is the weight of two ducks and one duckling?

2) A farmer grows 252 kilograms of apples. He sells them to a grocer who divides them into 5 kilogram and 2 kilogram bags. If the grocer uses the same number of 5 kg bags as 2kg bags, then how many bags did he use in all?

3) A 800 seat multiplex is divided into 3 theatres. There are 270 seats in Theatre 1, and there are 150 more seats in Theatre 2 than in Theatre 3. How many seats are in Theatre 2?

Summer Math (7)

Worksheet 3 – Order of Operations (Signed Numbers)

Name_____ Date_____

Evaluate the following expressions using the order of operations and your knowledge of integer operations.

1) $7 - 6(-3)$

2) $8 - 4 - 2 - 6$

3) $(-1)(2)(-3)(4)(-5)$

4) $(4 - 10) \div (-1 + 3)$

5) $(-5)^2$

6) $(-9)(-2) + (-11)$

Use the variable values below to evaluate the following expressions.

$$a = 8 \qquad b = -2 \qquad c = 12 \qquad d = -6$$

1) ab

2) $b + c - a$

3) $c \div b$

4) $a - d - c$

5) $(c + a)b$

6) $\dfrac{b + a}{d}$

Summer Math (7)

Worksheet 4 – Decimals

Name_____ Date_____

Evaluate the following expressions.

1) $3.41 + 2.06$

2) $9.5 - 4.27$

3) $0.802 - 0.09$

4) $0.7 + 2.33$

5) $(12.6)(3.4)$

6) $7(0.52)$

7) $9.88 \div 4$

8) $\dfrac{3.45}{0.3}$

Evaluate the following expressions. *Pay close attention to which operation you are being asked to perform.*

9) $(5.31)(0.26)$

10) $4.002 - 0.795$

11) $0.88 + 3.2$

12) $16.9 \div 1.3$

13) $7 - 1.48$

14) $0.271 + 0.553$

15) $11 \div 0.2$

16) $8(5.43)$

BONUS:

1) Mr. Mason asked the children to open their math books to the facing pages whose page numbers add up to 85. To which pages should the children turn?

2) Mark accidentally tore out a page of his math book. Mr. Mason asked him what page it was. Mark said that the sum of the page numbers on the facing pages was 127. What are the page numbers on the pages Mark tore out of the book?

Summer Math (7)

Worksheet 5 – Fractions

Name_____ Date_____

Evaluate the following expressions. Write your answers as mixed numbers.

1) $\dfrac{2}{3} \cdot \dfrac{5}{8}$

2) $\dfrac{7}{9} \cdot \dfrac{3}{14}$

3) $2\dfrac{1}{5} \cdot 3\dfrac{1}{3}$

4) $\dfrac{1}{6} \cdot 1\dfrac{1}{2}$

5) $\dfrac{8}{15} \div \dfrac{4}{5}$

6) $\dfrac{\frac{1}{3}}{\frac{1}{6}}$

7) $\dfrac{4\frac{2}{3}}{\frac{5}{9}}$

8) $2\dfrac{1}{4} \div 2\dfrac{1}{4}$

9) $\dfrac{4}{7} + \dfrac{2}{7}$

10) $\dfrac{3}{5} - \dfrac{3}{10}$

11) $\dfrac{2}{9} + \dfrac{1}{6}$

12) $\dfrac{2}{3} - \dfrac{1}{4}$

13) $-\dfrac{7}{12} - \dfrac{1}{3}$

14) $-\dfrac{1}{8} + \dfrac{1}{14}$

15) $1\dfrac{2}{3} + 3\dfrac{1}{3}$

16) $5\dfrac{4}{5} - 3\dfrac{1}{5}$

BONUS:

1) A Drug Store parking lot has space for 1000 cars. 2/5 of the spaces are for compact cars. On Tuesday, there were 200 compact cars and some standard size cars in the parking lot. The parking lot was 3/4 full.

How many standard size cars were in the parking lot?

2) Farmer Tom put a square fence around his vegetable garden to keep the deer from eating his corn. One side was 10m in length. If the posts were placed 2m apart, how many posts did he use?

Summer Math (7)

Worksheet 6 – Fractions (Mixed Numbers)

Name_____ Date_____

Evaluate the following expressions. Make sure that your answers are in simplest form.

1) $4\dfrac{2}{3} - 2\dfrac{1}{3}$

2) $3\dfrac{1}{6} + \dfrac{3}{4}$

3) $-7\dfrac{8}{15} - 3\dfrac{3}{10}$

4) $2\dfrac{7}{9} + 2\dfrac{2}{3}$

5) $5\dfrac{3}{8} - 2\dfrac{5}{6}$

6) $-1\dfrac{2}{5} + 4\dfrac{1}{2}$

7) Annie passed around a basket of strawberries to the girls at her party. Before the party she ate 5 strawberries and gave a friend 3. Eight girls arrived at the party. The first girl took a strawberry, the second girl took 3 strawberries, the third girl took 5 strawberries and so on. After the last girl took her strawberries, the basket was empty. How many strawberries were in the basket at the beginning?

8) Rob wanted an allowance. His father gave him a choice of getting it on a weekly or on a daily basis. He said he would either pay him $1.25 a week or pay him in the following manner for a week: On Monday he would give him $0.01; On Tuesday $0.02; On Wednesday $0.04 and on through Sunday. What would you tell Rob to do so he can get more allowance?

BONUS:

1) Jenny bought 7 t-shirts, one for each of her seven brothers, for $9.95 each. The cashier charged her an additional $13.07 in sales tax. She left the store with only $7.28. How much money did Jenny start with?

2) I am an astronomer and my camera lens is 1.372m across. My friend George is a spy and he has a camera lens of 2.9cm across. My aunt Marie is a surgeon and she has a lens 1.5cm across.

   a) How many more metres across is my camera lens than Marie's?

   b) How many fewer metres across is Marie's camera lens than George's?

   c) Around how many of George's camera lens' would fit across mine?

Summer Math (7)

Worksheet 7 – Intro to Percents

Name _____   Date _____

1.   **Write each fraction as a percent.**

a) $\frac{15}{100}$

_____

b) $\frac{18}{20}$

_____

c) $\frac{4}{25}$

_____

d) $\frac{7}{8}$

_____

2.   **Write each decimal as a percent.**

a)   0.17

_____

b)   0.95

_____

c)   0.03

_____

d)   0.625

_____

3.   **Write each percent as a fraction.**

a)   21%

_____

b)   75%

_____

c)   16%

_____

d)   105%

_____

4.   **Write each percent as a decimal.**

a)   19%

_____

b)   12.5%

_____

c)   65%

_____

d)   0.0375%

_____

BONUS:

1) The number of hours that were left in the day was one-third of the number of hours already passed. How many hours were left in the day?

2) A manufacturer claims that a new motor oil saves 5 percent of the gasoline used by a car. If you drive 24,000 kilometers a year and he gets 32 kilometers a gallon of gasoline, how many gallons of gasoline could you save in 1 year?

Summer Math (7)

Worksheet 8 – Linear Equations

Name_____ Date_____

Solve the following equations.

1) $2x = 16$

2) $h - 5 = 11$

3) $\dfrac{m}{2} = 10$ *(m divided by 2 equals 10)*

4) $7 + w = 15$

5) $y - 3 = -5$

6) $\dfrac{q}{5} = -4$

7) $g + 30 = -45$

8) $-6n = -42$

9) $18 - z = 12$

10) $\dfrac{k}{3} = -21$

BONUS:

1)   What is the starting number (?) ?

19
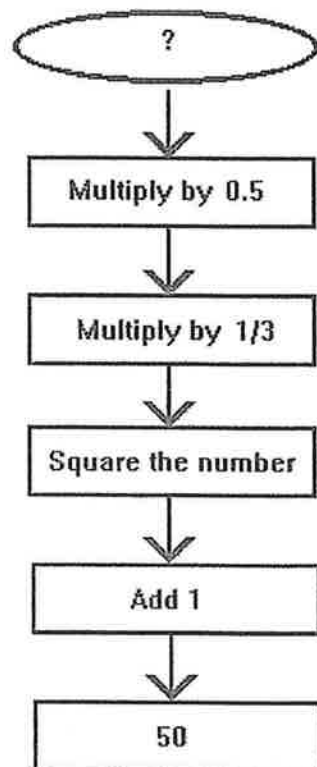
Summer Math (7)

Worksheet 9 – Perimeter

Name_____ Date_____

Find the perimeter of the following figures. Include units with your answers.
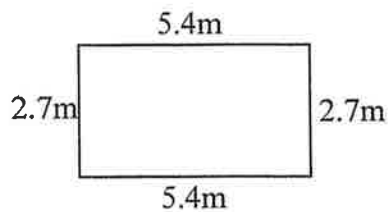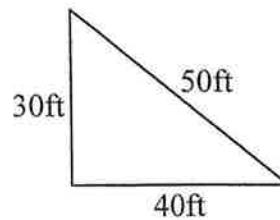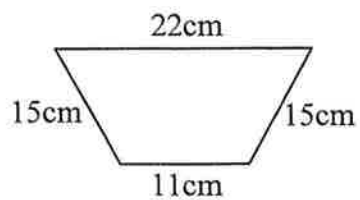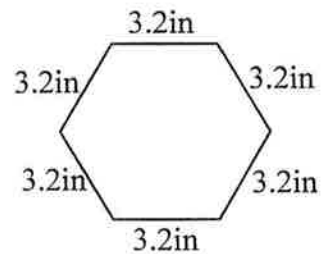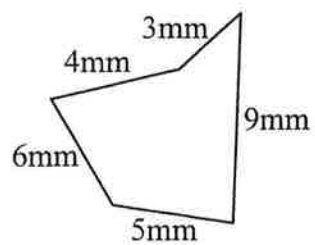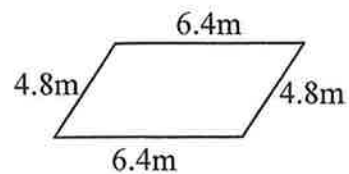
1)

5.4m
2.7m   2.7m
5.4m

2)

30ft   50ft
40ft

3)

22cm
15cm   15cm
11cm

4)

3.2in
3.2in   3.2in
3.2in   3.2in
3.2in

5)

3mm
4mm
6mm
9mm
5mm

6)

6.4m
4.8m   4.8m
6.4m

BONUS:

1) Jeremy had this problem on his first mathematics examination. He was having big problems with answering the question. Replace each letter with a different number. Identical letters should be replaced with the same number.

```
        SPART
    x       4
    ----------
        TRAPS
```

Can you help him?

Summer Math (7)

Worksheet 10 – Area

Name_____ Date_____

Find the area of the figures below. Include units with your answers.
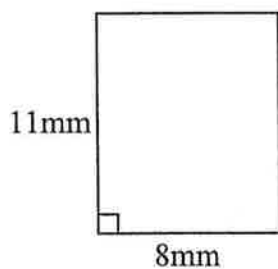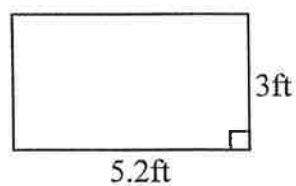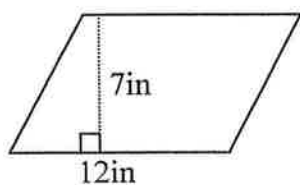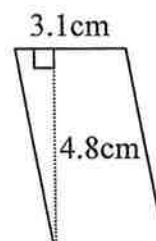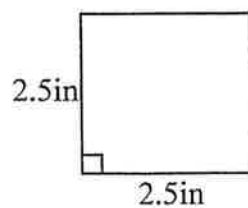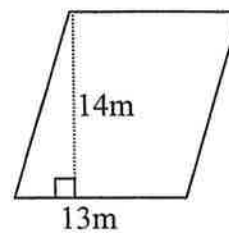
1)

11mm

8mm

2)

3ft

5.2ft

3)

7in

12in

4)

3.1cm

4.8cm

5)

2.5in

2.5in

6)

14m

13m

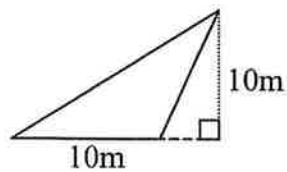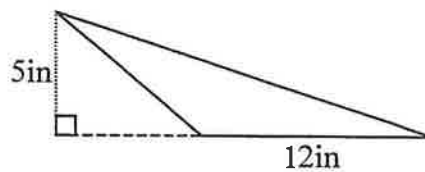Find the areas of the following triangles. Include units with your answers.

7)

9cm
12cm

8)

3in
4in
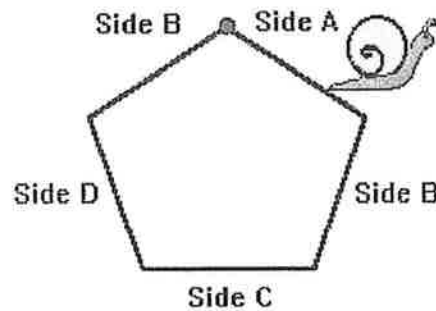
9)

14mm
36mm

10)

24ft
7ft

11)

10m
10m

12)

5in
12in
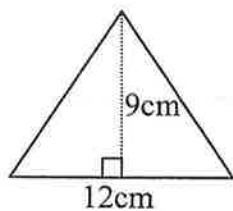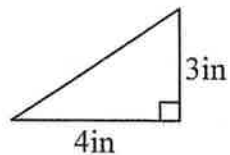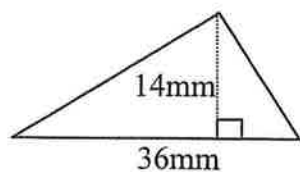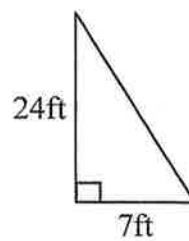
BONUS:

1) A side of square B is four times the length of a side of square A. How many times greater is the area of square B than the area of square A?
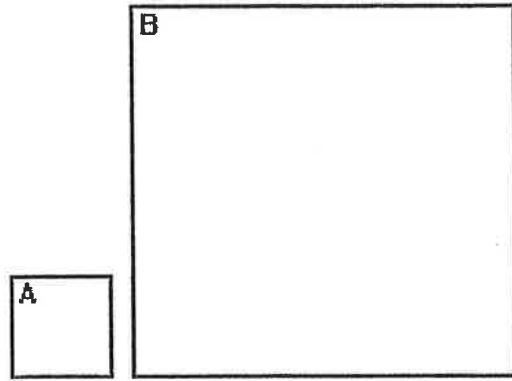
2) Shane the Snail started at the dot. What side will he be on when he has crawled 13/20 of the distance around the regular pentagon of equal sides?

Summer Math (7)
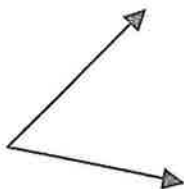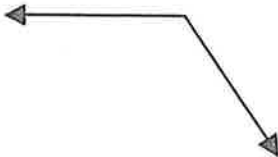
Worksheet 11 – Angles and Triangles

Name_____ Date_____

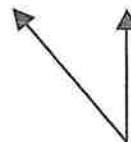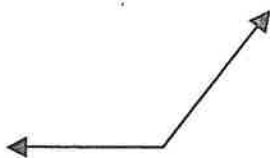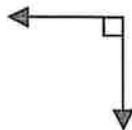Label the following types of angles as "acute", "right" or "obtuse" and estimate their measure.

1)

2)

3)

4)

5)

6)

Classify each triangle as isosceles, scalene, or equilateral and as right, acute, or obtuse.

7.	8.	9.	10.
_____	_____	_____	_____

BONUS:

1) Two carpenters decided to design desks for students at the Junior High. The dimensions of the desk are as shown. How much wood would they need for 30 desks? (in cm^2).

70cm

30cm

20cm   20cm

2) Carpeting is on sale and Mrs. Doyle is looking for some carpet for her living room. Her living room is 4m by 5m. How much will it cost her to do this at sale price?

CARPET SALE
Regular $9.99 square meter
Now on Sale for 20 percent off

3) The total bus fare was $2.10. What was the distance travelled when the fare is $0.90 for the first 1/3 km and $0.10 for each 1/8 additional kilometer?

Summer Math (7)

Worksheet 12 – Word Problems

Name_____ Date_____

For each problem below

- define the variable
- write the equation
- solve the problem
- answer the question

1) Four less than a number is 70. Find the number.

2) 5 more than twice a number is -8. Find the number.

3) If twice a number is decreased by 10, the result is 26. Find the number.

4) The ABC Car Rental Agency rents cars for $23 plus $0.10 per mile. If Ruby has $55 to spend, how far can she drive?

5) Danielle saves $3.75 per week. How many weeks will it take her to save a total of $52.50?

6) Rachel has two thirds as many customers as she had yesterday. If she has 18 customers today, how many did she have yesterday?

7) 40 less than 8 times Mary's age is the same as 24. How old is Mary?

8)   If $56.35 is $21.65 less than double the money Sally earned. How much did she earn?

9)   In an isosceles triangle the base is 6 inches longer than each of the legs. If the perimeter of the triangle is 36 inches, how long each of the legs?

10)   The perimeter of a rectangle is 42. If the length two times the width, what are the dimensions of the rectangle?

GRAPHING FOR FUN!

Locate the following points on the graph below and connect them in order with straight line segments. Do not connect points separated by the word "STOP."

(X,Y) = (5,1), (6,2), (7,1), (8,2), (9,1) STOP (7,-1), (8,0), (9,-1), (10,0), (11,-1) STOP (-9,9), (-10,7), (-8,3), (-8,1), (-9,-1), (-8,-3), (-6,-1), (-4,9), (3,11), (4,5), (-6,-1), (3,11) STOP (-4,9), (4,5) STOP (0,7), (1,3), (2,0), (4,-4), (8,-10), (10,-12) STOP (-12,-9), (-11,-11), (-10,-8), (-9,-11), (-8,-9), (-7,-11), (-6,-10), (-5,-11), (-4,-8), (-3,-11), (-2,-6), (-1,-11), (0,-9), (1,-11), (2,-10), (3,-11), (4,-7), (5,-11), (6,-8), (7,-11), (9,-8), (10,-11), (11,-7), (12,-11).

HINT! On a windy day, you might want to do this! Remember to connect the points as you work!
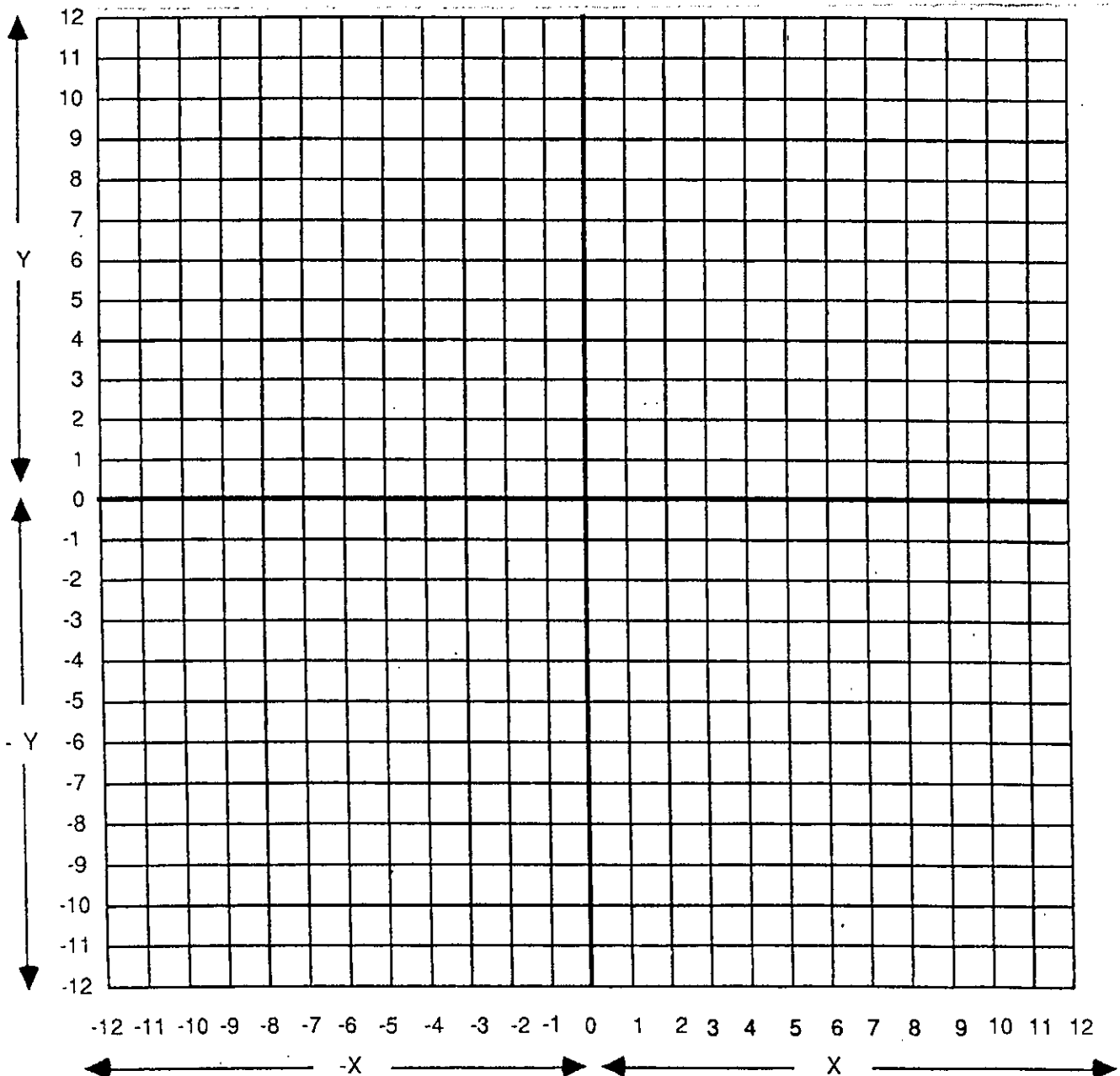
Summer Math (7)

Worksheet 1 – Order of Operations

Evaluate each of the following.

1) $(5)(12) =$ 60

2) $\dfrac{1431}{9} =$ 159

$$\begin{array}{r} 159 \\ 9\overline{)1431} \\ 9 \\ \hline 53 \\ 45 \\ \hline 81 \\ 81 \\ \hline 0 \end{array}$$

3) $2^5 =$ 2·2·2·2·2

= 32

4) $5^2 =$ 5·(5)

= 25

5) $(25)(3)(4) =$ 300

⌞___⌟
100

6) $216 \div 12 =$ 18

$$\begin{array}{r} 18 \\ 12\overline{)216} \\ 12 \\ \hline 96 \end{array}$$

Using the order of operations (PEMDAS) evaluate the following expressions.

7) $3 + 8 \div 4 =$ 5

3 + 2

8) $1 + 5^2 =$ 26

1 + 25

9) $11 - (4 + 3) =$ 4

11 - 7

10) $9 \cdot (5 + 1) =$ 54

9 · 6

11) $4 \cdot 6 \div 2^3$

24 ÷ 8 = 3

12) $8 \div 2 \cdot 4 =$ 16

4 · 4

13) $96 \div 3 - 2 \times 7 = \boxed{18}$

$32 - 14$

14) $[5 \cdot (2+2)] + 3 - 11 = \boxed{12}$

$[5(4)] + 3 - 11$

$20 + 3 - 11 = 23 - 11$

BONUS:

6/2+5(4) 25-(17-4)	12 6/2+8/2	4+(4-4) 4 13	5+3(7) 26 8+9(2)+4
23 18-(8+4) 9	7 6 6(3)/4-1	(21+18)/3 9(7)-2(8) 47 19	30 4(3)+5(2) 22 6(7)+5(4)
7+4-3+1 34 5(7+6+8)	1 5(4)+2(1+6) 56	2+4(6)-7 64 (7+9)4 43	62 4+6(3+2)-1 33 24-4(2)
105 21+4(9)-7	7(12-4) 50 96	7+3(4+8) 5(4)(3)+6(6) 6(5)+4(9-2)	16 58

Summer Math (7)

Worksheet 2 – Signed Number Arithmetic

Perform the following integer operations.

1) $-5+3$ $= -2$

2) $9-(-3)$ $= 12$

3) $8-14$ $= -6$

4) $-1(-7)$ $= 6$

5) $(-3)(-11) = 33$

6) $16 \div (-4) = -4$

7) $(-21) \div (-7) = 3$

8) $5 \cdot (-8) = -40$

9) $-4+3-9-2$ $= -12$

$-15+3$

10) $-3 \cdot 4 \cdot -1 = 12$

11) $\dfrac{-212}{-4} = 53$

12) $\dfrac{12(-6)}{2(4)} = -9$

2

BONUS:

1) Three ducks and two ducklings weigh 32 kg. Four ducks and three ducklings weigh 44kg. All ducks weigh the same and all ducklings weigh the same. What is the weight of two ducks and one duckling?

20 Kg

2) A farmer grows 252 kilograms of apples. He sells them to a grocer who divides them into 5 kilogram and 2 kilogram bags. If the grocer uses the same number of 5 kg bags as 2kg bags, then how many bags did he use in all?

72 bags

3) A 800 seat multiplex is divided into 3 theatres. There are 270 seats in Theatre 1, and there are 150 more seats in Theatre 2 than in Theatre 3. How many seats are in Theatre 2?

340 seats

Summer Math (7)

Worksheet 3 – Order of Operations (Signed Numbers)

Evaluate the following expressions using the order of operations and your knowledge of integer operations.

1) $7 - 6(-3)$ = ⃝25

$7 + 18$

2) $8 - 4$ = ⃝(-4)

$8 - 12$

3) $(-1)(2)(-3)(4)(-5)$ = ⃝(-120)

10

4) $(4-10) \div (-1+3)$ = ⃝(-3)

$-6 \div 2$

5) $(-5)^2$ = 25

$(-5)(-5)$

6) $(-9)(-2) + (-11)$ = 7

$18 - 11$

Use the variable values below to evaluate the following expressions.

$a = 8$ $b = -2$ $c = 12$ $d = -6$

1) ab = -16

$(8)(-2)$

2) $b + c - a$ = 2

$(-2) + (12) - (8)$

$-10 + 12$

3) $c \div b$ = ⃝(-6)

$(12) \div (-2)$

4) $a - d - c$ = ⃝2

$8 - (-6) - (12)$

$8 + 6 - 12$

5) $(c + a)b$ = ⃝(-40)

$(12 + 8)(-2)$

$(20)(-2)$

6) $\dfrac{b + a}{d}$ = ⃝(-1)

$\dfrac{-2+8}{-6} = \dfrac{6}{-6}$

Summer Math (7)

Worksheet 4 – Decimals

Evaluate the following expressions.

1) $3.41 + 2.06 = 5.47$

$$\begin{array}{r} 3.41 \\ + 2.06 \\ \hline 5.47 \end{array}$$

2) $9.5 - 4.27 = 5.23$

$$\begin{array}{r} 9.5\overset{4}{\cancel{5}}\overset{10}{0} \\ - 4.27 \\ \hline 5.23 \end{array}$$

3) $0.802 - 0.09 = 0.712$

$$\begin{array}{r} \overset{7}{\cancel{8}}\overset{10}{\cancel{0}}2 \\ - .090 \\ \hline .712 \end{array}$$

4) $0.7 + 2.33 = 3.03$

$$\begin{array}{r} 0.70 \\ + 2.33 \\ \hline 3.03 \end{array}$$

5) $(12.6)(3.4) = 42.84$

$$\begin{array}{r} 12.6 \\ 3.4 \\ \hline 504 \\ 378 \\ \hline 4284 \end{array}$$ ← need 2 decimal places

6) $7(0.52) = 3.64$

$$\begin{array}{r} 0.52 \\ 7 \\ \hline 3.64 \end{array}$$

7) $9.88 \div 4 = 2.47$

$$\begin{array}{r} 2.47 \\ 4\overline{)9.88} \\ 8 \\ \hline 18 \\ 16 \\ \hline 28 \\ 28 \end{array}$$

8) $\frac{3.45}{0.3} = 11.5$

$$\begin{array}{r} 11.5 \\ 0.3\overline{)3.45} \\ 3 \\ \hline 4 \\ 3 \\ \hline 15 \end{array}$$

Evaluate the following expressions. *Pay close attention to which operation you are being asked to perform.*

9) $(5.31)(0.26) =$ 1.3806

$$5.31$$
$$.26$$
$$\overline{}$$
$$3186$$
$$1062$$
$$\overline{}$$
$$1.3806$$ ← need 4 decimal places

10) $4.002 - 0.795 =$ 3.207

$$\overset{3\ 9\ 9\ 12}{4.002}$$
$$-\ .795$$
$$\overline{}$$
$$3.207$$

11) $0.88 + 3.2 =$ 4.08

$$3.20$$
$$+\ .88$$
$$\overline{}$$
$$4.08$$

12) $16.9 \div 1.3 =$ 13

$$\begin{array}{r} 13. \\ 1\times3\overline{)16\times9.} \\ 13 \\ \overline{39} \\ 39 \end{array}$$

13) $7 - 1.48 =$ 5.52

$$\overset{6\ 9\ 10}{7.00}$$
$$-\ 1.48$$
$$\overline{}$$
$$5.52$$

14) $0.271 + 0.553 =$ 0.824

$$\overset{1}{}$$
$$0.271$$
$$+\ 0.553$$
$$\overline{}$$
$$0.824$$

15) $11 \div 0.2 =$ 55

$$\begin{array}{r} 55. \\ \times2\overline{)11\times0.} \\ 10 \\ \overline{10} \\ 10 \end{array}$$

16) $8(5.43) =$ 43.44

$$\overset{3\ 2}{5.43}$$
$$\times\ 8$$
$$\overline{}$$
$$43.44$$

BONUS:

1) Mr. Mason asked the children to open their math books to the facing pages whose page numbers add up to 85. To which pages should the children turn? 42 and 43

2) Mark accidentally tore out a page of his math book. Mr. Mason asked him what page it was. Mark said that the sum of the page numbers on the facing pages was 127. What are the page numbers on the pages Mark tore out of the book? 63 and 64

Summer Math (7)

Worksheet 5 – Fractions

Evaluate the following expressions. Write your answers as mixed numbers.

1) $\dfrac{\overset{1}{\cancel{2}}}{3} \cdot \dfrac{5}{\underset{4}{\cancel{8}}} = \boxed{\dfrac{5}{12}}$

2) $\dfrac{\overset{1}{\cancel{7}}}{\underset{3}{\cancel{8}}} \cdot \dfrac{\overset{1}{\cancel{8}}}{\underset{2}{\cancel{14}}} = \boxed{\dfrac{1}{6}}$

3) $2\dfrac{1}{5} \cdot 3\dfrac{1}{3} = \boxed{7\dfrac{1}{3}}$

$\dfrac{11}{\underset{1}{\cancel{5}}} \cdot \dfrac{\overset{2}{\cancel{10}}}{3} = \dfrac{22}{3}$

4) $\dfrac{1}{6} \cdot 1\dfrac{1}{2} = \boxed{\dfrac{1}{4}}$

$\dfrac{1}{\underset{2}{\cancel{6}}} \cdot \dfrac{\overset{1}{\cancel{3}}}{2}$

5) $\dfrac{8}{15} \div \dfrac{4}{5} = \boxed{\dfrac{2}{3}}$

$\dfrac{\overset{2}{\cancel{8}}}{\underset{3}{\cancel{18}}} \times \dfrac{\overset{}{\cancel{5}}}{\underset{1}{\cancel{4}}}$ flip

6) $\dfrac{\frac{1}{3}}{\frac{1}{6}} = \boxed{2}$

$\dfrac{1}{\cancel{3}} \cdot \dfrac{\overset{2}{\cancel{6}}}{1}$ flip

1

7) $\dfrac{4\frac{2}{3}}{\frac{5}{9}} = \boxed{8\dfrac{2}{5}}$

flip

$\dfrac{14}{\underset{1}{\cancel{3}}} \cdot \dfrac{\overset{3}{\cancel{9}}}{5} = \dfrac{42}{5}$

8) $2\dfrac{1}{4} \div 2\dfrac{1}{4} = \boxed{1}$

$\dfrac{\overset{1}{\cancel{9}}}{\cancel{4}} \cdot \dfrac{\overset{1}{\cancel{4}}}{\cancel{9}}$

9) $\dfrac{4}{7} + \dfrac{2}{7} = \boxed{\dfrac{6}{7}}$

10) $\dfrac{3}{5} - \dfrac{3}{10} = \boxed{\dfrac{3}{10}}$

$\dfrac{6}{10} - \dfrac{3}{10}$

11) $\dfrac{2}{9} + \dfrac{1}{6} = \dfrac{7}{18}$

$\dfrac{4}{18} + \dfrac{3}{18}$

12) $\dfrac{2}{3} - \dfrac{1}{4}$

$\dfrac{8}{12} - \dfrac{3}{12}$

13) $-\dfrac{7}{12} - \dfrac{1}{3} = \boxed{-\dfrac{11}{12}}$

$-\dfrac{7}{12} - \dfrac{4}{12}$

14) $-\dfrac{1}{8} + \dfrac{1}{14} = \boxed{\dfrac{-3}{56}}$

$\dfrac{-7}{56} + \dfrac{4}{56}$

15) $1\dfrac{2}{3} + 3\dfrac{1}{3} = \boxed{5}$

$4 + 1$

16) $5\dfrac{4}{5} - 3\dfrac{1}{5} = \boxed{2\dfrac{3}{5}}$

$\dfrac{29}{5} - \dfrac{16}{5} = \dfrac{13}{5}$

BONUS:

1) A Drug Store parking lot has space for 1000 cars. 2/5 of the spaces are for compact cars. On Tuesday, there were 200 compact cars and some standard size cars in the parking lot. The parking lot was 3/4 full.

How many standard size cars were in the parking lot?   **500**

2) Farmer Tom put a square fence around his vegetable garden to keep the deer from eating his corn. One side was 10m in length. If the posts were placed 2m apart, how many posts did he use?   **16**

Summer Math (7)

Worksheet 6 – Fractions (Mixed Numbers)

Evaluate the following expressions. Make sure that your answers are in simplest form.

1) $4\frac{2}{3} - 2\frac{1}{3} =$ $\boxed{2\frac{1}{3}}$

$\frac{14}{3} - \frac{7}{3} = \frac{7}{3}$

2) $3\frac{1}{6} + \frac{3}{4} =$ $\boxed{3\frac{11}{12}}$

$\downarrow$

$\frac{19}{6} + \frac{3}{4}$

$\frac{38}{12} + \frac{9}{12} = \frac{47}{12}$

3) $-7\frac{8}{15} - 3\frac{3}{10} =$ $\boxed{-10\frac{5}{6}}$

$\downarrow \qquad \downarrow$

$-\frac{113}{15} - \frac{33}{10}$

$\downarrow \qquad \downarrow$

$-\frac{226}{30} - \frac{99}{30} = \frac{-325}{30}$

4) $2\frac{7}{9} + 2\frac{2}{3} =$ $\boxed{5\frac{4}{9}}$

$\downarrow \qquad \downarrow$

$\frac{25}{9} + \frac{8}{3}$

$\downarrow$

$\frac{25}{9} + \frac{24}{9} = \frac{49}{9}$

5) $5\frac{3}{8} - 2\frac{5}{6} =$ $\boxed{2\frac{13}{24}}$

$\downarrow \qquad \downarrow$

$\frac{43}{8} - \frac{17}{6}$

$\frac{129}{24} - \frac{68}{24} = \frac{61}{24}$

6) $-1\frac{2}{5} + 4\frac{1}{2} =$ $\boxed{3\frac{1}{10}}$

$\downarrow$

$-\frac{7}{5} + \frac{9}{2}$

$\downarrow$

$\frac{-14}{10} + \frac{45}{10} = \frac{+31}{10}$

7) Ammie passed around a basket of strawberries to the girls at her party. Before the party she ate 5 strawberries and gave a friend 3. Eight girls arrived at the party. The first girl took a strawberry, the second girl took 3 strawberries, the third girl took 5 strawberries and so on. After the last girl took her strawberries, the basket was empty. How many strawberries were in the basket at the beginning?

Ammie's basket of strawberries

| 5 | 3 | 1 | 3 | 5 | 7 | 9 | 11 | 13 | 15 |

ate friend ↑ ↑ ↑
1st 2nd 3rd
girl girl girl
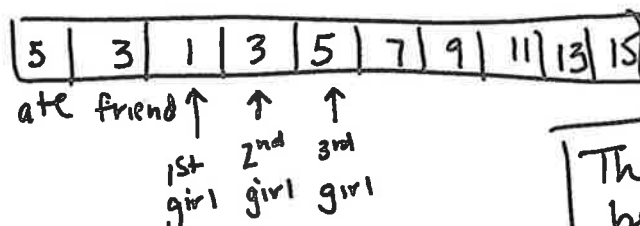
There were 72 strawberries in the basket

8) Rob wanted an allowance. His father gave him a choice of getting it on a weekly or on a daily basis. He said he would either pay him $1.25 a week or pay him in the following manner for a week: On Monday he would give him $0.01; On Tuesday $0.02; On Wednesday $0.04 and on through Sunday. What would you tell Rob to do so he can get more allowance?

method 1: $1.25

Method 2: 1¢ + 2¢ + 4¢ + 8¢ + 16¢ + 32¢ + 64¢
$1.27 ← better

BONUS:

1) Jenny bought 7 t-shirts, one for each of her seven brothers, for $9.95 each. The cashier charged her an additional $13.07 in sales tax. She left the store with a measely $7.28. How much money did Jenny start with?

$90

2) I am an astronomer and my camera lens is 1.372m across. My friend George is a spy and he has a camera lens of 2.9cm across. My aunt Marie is a surgeon and she has a lens 1.5cm across.

a) How many more metres across is my camera lens than Marie's?   1.343 m

b) How many fewer metres across is Marie's camera lens than George's?   .041 m

c) Around how many of George's camera lens' would fit across mine? 47

Summer Math (7)

Worksheet 7 – Intro to Percents

Name _____   Date _____

1.   Write each fraction as a percent.

a) $\frac{15}{100}$ 15%

b) $\frac{18}{20}$ 90%

c) $\frac{4}{25}$ 16%

d) $\frac{7}{8}$ 87.5%

2.   Write each decimal as a percent.

a)   0.17   17%

b)   0.95   95%

c)   0.03   3%

d)   0.625   62.5%

3.   Write each percent as a fraction.

a)   21% $\frac{21}{100}$

b)   75%   3/4

c)   16%   4/25

d)   105%   1 1/20

4.   Write each percent as a decimal.

a)   19%   .19

b)   12.5%   .125

c)   65%   .65

d)   0.0375%   .000375

BONUS:

1) The number of hours that were left in the day was one-third of the number of hours already passed. How many hours were left in the day?   6 hours

2) A manufacturer claims that a new motor oil saves 5 percent of the gasoline used by a car. If you drive 24,000 kilometers a year and he gets 32 kilometers a gallon of gasoline, how many gallons of gasoline could you save in 1 year?   37.5 gal.

Summer Math (7)

Worksheet 8 – Linear Equations

Solve the following equations.

1) $2x = 16$

$$\frac{2x}{2} = \frac{16}{2}$$

$x = 8$

2) $h - 5 = 11$

$+5 \quad +5$

$h = 16$

3) $\dfrac{m}{2} = 10$ *(m divided by 2 equals 10)*

$2\left(\dfrac{m}{2} = 10\right)2$

$m = 20$

4) $7 + w = 15$

$-7 \quad -7$

$w = 8$

5) $y - 3 = -5$

$+3 \quad +3$

$y = -2$

6) $\dfrac{q}{5} = -4$

$5\left(\dfrac{q}{5} = -4\right)5$

$q = -20$

7) $g + 30 = -45$

$-30 \quad -30$

$g = -75$

8) $-6n = -42$

$\dfrac{-6n}{-6} = \dfrac{-42}{-6}$

$h = 7$

9) $18 - z = 12$

$-18 \quad -18$

$-z = -6$

$z = 6$

10) $\dfrac{k}{3} = -21$

$3\left(\dfrac{k}{3} = -21\right)3$

$k = -63$

BONUS:

1) What is the starting number (?) ?

?

? = 42

Multiply by 0.5

42

Multiply by 1/3

21

Square the number

7

Add 1

49

50
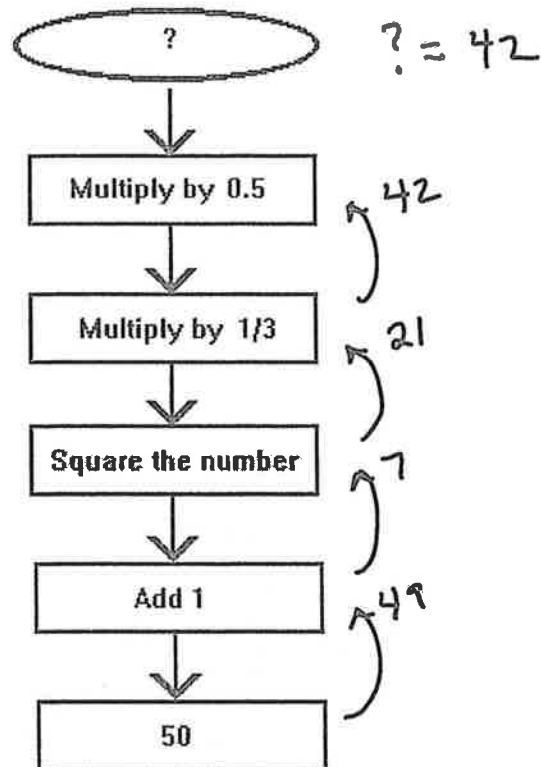
Summer Math (7)

Worksheet 9 – Perimeter

Find the perimeter of the following figures. Include units with your answers.

1) $P = 16.2\ m$

5.4m

2.7m   2.7m

5.4m
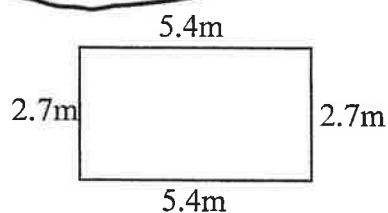
$$\begin{array}{c} 5.4 \\ \times\ 2 \\ \hline 10.8 \end{array} \quad \begin{array}{c} 2.7 \\ \times\ 2 \\ \hline 5.4 \end{array} \quad \begin{array}{c} 10.8 \\ +\ 5.4 \\ \hline 16.2 \end{array}$$

2) $P = 120\ ft$

50ft

30ft

40ft
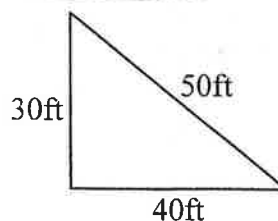
$$\begin{array}{c} 30 \\ 40 \\ +\ 50 \\ \hline 120 \end{array}$$

3) $P = 63\ cm$

22cm

15cm   15cm

11cm
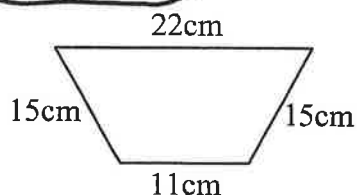
$$\begin{array}{c} 22 \\ 11 \\ 15 \\ 15 \\ \hline 63 \end{array}$$

4) $P = 19.2\ in$

3.2in

3.2in   3.2in

3.2in   3.2in

3.2in

$$\begin{array}{c} 3.2 \\ \times\ 6 \\ \hline 19.2\ in \end{array}$$

5) $P = 27\ mm$

3mm

4mm

6mm   9mm

5mm

$4 + 3 + 6 + 5 + 9$

6) $P = 22.4\ m$

6.4m

4.8m   4.8m

6.4m
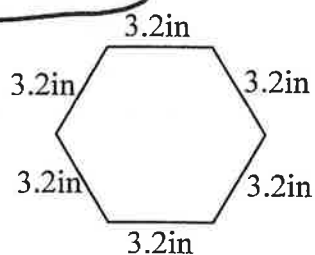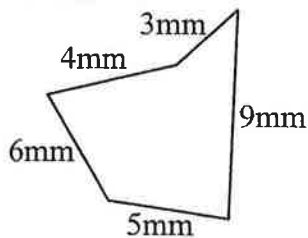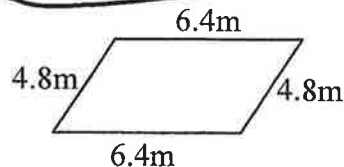
$$\begin{array}{c} 6.4 \\ \times\ 2 \\ \hline 12.8 \end{array} \quad \begin{array}{c} 4.8 \\ \times\ 2 \\ \hline 9.6 \end{array} \quad \begin{array}{c} 12.8 \\ +\ 9.6 \\ \hline 22.4 \end{array}$$

BONUS:

1) Jeremy had this problem on his first mathematics examination. He was having big problems with answering the question. Replace each letter with a different number. Identical letters should be replaced with the same number.

```
     SPART
  x        4
  ----------
     TRAPS
```

Can you help him?

$$21978$$
$$\times\ 4$$
$$\overline{87912}$$

Summer Math (7)

Worksheet 10 – Area

Find the area of the figures below. Include units with your answers.

1) $A = 88 \text{ mm}^2$

11mm

8mm

2) $A = 15.6 \text{ ft}^2$

3ft

5.2ft

3) $A = 84 \text{ in}^2$

7in

12in

4) $A = 14.88 \text{ cm}^2$

3.1cm

4.8cm
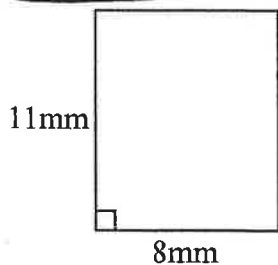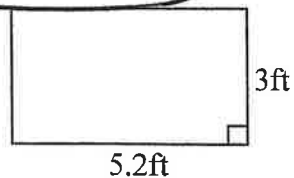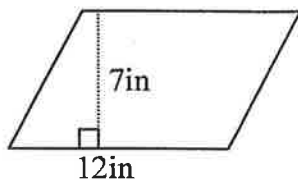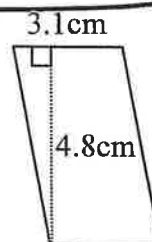
$$\begin{array}{r} 3.1 \\ 4.8 \\ \hline 248 \\ 124 \\ \hline 1488 \end{array}$$

5) $A = 6.25 \text{ in}^2$

2.5in

2.5in

6) $A = 182 \text{ m}^2$

14m

13m
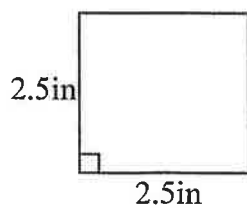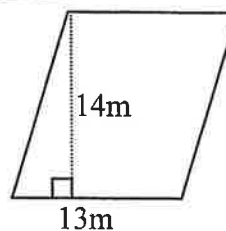
$$\begin{array}{r} 14 \\ 13 \\ \hline 42 \\ 14 \\ \hline 182 \end{array}$$

Fine the areas of the following triangles. Include units with your answers.

7) $A = 54 \, cm^2$

9cm

12cm

$\frac{1}{2}(12)(9) = 6\,(9)$

8) $A = 6 \, in^2$

3in

4in

$A = \frac{1}{2}(4)(3) = 6$

9) $A = 252 \, mm^2$

14mm

36mm
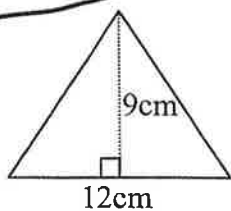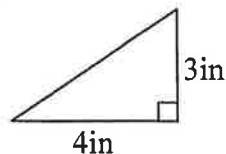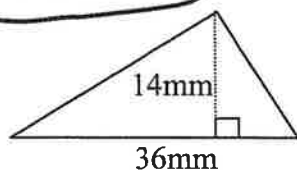
$\frac{1}{2}(36)(14) = 18(14)$

$= 252$

10) $A = 84 \, ft^2$
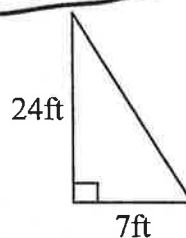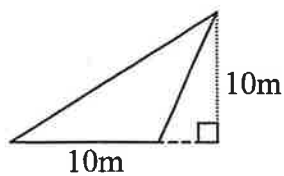
24ft

7ft

$A = \frac{1}{2}(24)(7)$

$= (12)(7)$

$\begin{array}{r} 18 \\ \times 14 \\ \hline 72 \\ 18 \\ \hline \end{array}$

11) $A = 50 m^2$

10m

10m

$\frac{1}{2}(10)(10)$

12) $A = 30 \, in^2$

5in

12in

$\frac{1}{2}(12)(5)$

BONUS:

1) A side of square B is four times the length of a side of square A. How many times greater is the area of square B than the area of square A?

B

A

B is 16 times A

2) Shane the Snail started at the dot. What side will he be on when he has crawled 13/20 of the distance around the regular pentagon of equal sides?
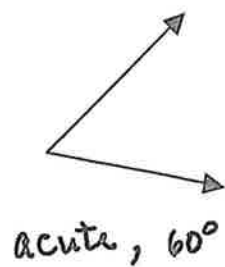
Side B   Side A

Side D

Side B
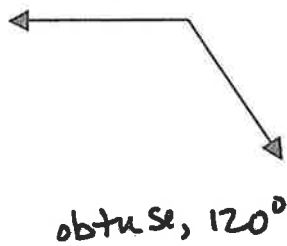
Side C

Side D

Summer Math (7)

Worksheet 11 – Angles and Triangles

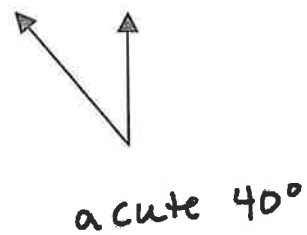Label the following types of angles as "acute", "right" or "obtuse" and estimate their measure.
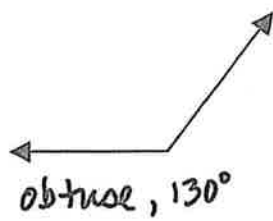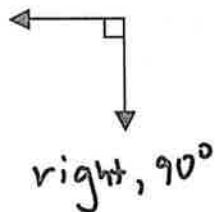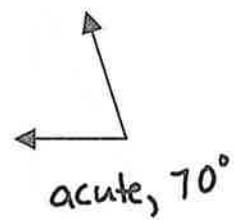
1)

acute, 60°

2)

obtuse, 120°

3)

acute 40°

4)

obtuse, 130°

5)

right, 90°

6)

acute, 70°
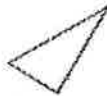
Classify each triangle as isosceles, scalene, or equilateral and as right, acute, or obtuse.

7.	8.	9.	10.
right scalene	equilateral	obtuse isosceles	obtuse scalene

BONUS:

1) Two carpenters decided to design desks for students at the Junior High. The dimensions of the desk are as shown. How much wood would they need for 30 desks? (in cm²).

70cm

30cm

20cm   20cm

81000 cm²

1) Carpeting is on sale and Mrs. Doyle is looking for some carpet for her living room. Her living room is 4m by 5m. How much will it cost her to do this at sale price?

CARPET SALE
Regular $9.99 square meter
Now on Sale for 20 percent off

$159.84

2) The total bus fare was $2.10. What was the distance travelled when the fare is $0.90 for the first 1/3 km and $0.10 for each 1/8 additional kilometer?

$1\frac{5}{6}$ km

Summer Math (7)

Worksheet 12 – Word Problems

For each problem below

- define the variable
- write the equation
- solve the problem
- answer the question

1) Four less than a number is 70. Find the number.

Let $x = \#$

$x - 4 = 70$

$\underline{+4 \quad +4}$

$x = 74$ The number is 74

2) 5 more than twice a number is -8. Find the number.

Let $x = \#$ The number is $-6\frac{1}{2}$.

$2x + 5 = -8$

$\underline{-5 \quad -5}$

$2x = -13$

$x = -13/2$

3) If twice a number is decreased by 10, the result is 26. Find the number.

Let $x = \#$ $x = 18$ The number is 18

$2x - 10 = 26$

$\underline{+10 \quad +10}$

$2x = 36$

4) The ABC Car Rental Agency rents cars for $23 plus $0.10 per mile. If Ruby has $55 to spend, how far can she drive?

Let $x =$ how far she drives

$55 = 23 + .10x$

$\underline{-23 \quad -23}$

$\dfrac{32}{.1} = \dfrac{.1x}{.1}$

$x.1 \overline{)32.0}$ 320

She can drive 320 mi

5) Danielle saves $3.75 per week. How many weeks will it take her to save a total of $52.50?

Let x = # of weeks

$$\frac{52.50}{3.75} = \frac{3.75 \, x}{3.75}$$

$$14 = x$$

She will save 14 weeks

6) Rachel has two thirds as many customers as she had yesterday. If she has 18 customers today, how many did she have yesterday?

Let x = # customers yesterday

$$18 = \frac{2}{3} x$$

$$\frac{3}{2} \cdot \frac{\overset{9}{\cancel{18}}}{1} = x$$

$$27 = x$$

She had 27 customers yesterday.

7) 40 less than 8 times Mary's age is the same as 24. How old is Mary?

Let x = Mary's age

$$8x - 40 = 24$$
$$ +40 +40$$
$$\overline{ \quad\quad}$$
$$\frac{8x}{8} = \frac{64}{8}$$
$$x = 8$$

Mary is 8

8) If $56.35 is $21.65 less than double the money Sally earned. How much did she earn?
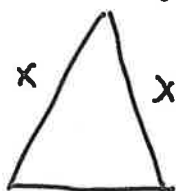
Let x = amt Sally earns

$$56.35 = 2x - 21.65$$
$$+21.65 \qquad + 21.65$$
$$\overline{}$$
$$78.00 = 2x$$
$$39 = x$$

She earns $39

9) In an isosceles triangle the base is 6 inches longer than each of the legs. If the perimeter of the triangle is 36 inches, how long each of the legs?
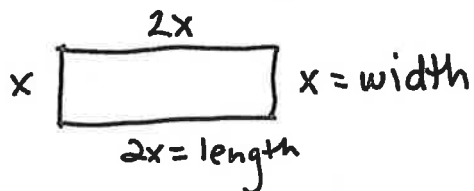
Let x = length of a leg

Each leg is 10 in

$$36 = x + x + x + 6$$
$$36 = 3x + 6$$
$$-6 \qquad -6$$
$$\overline{}$$
$$30 = 3x$$
$$10 = x$$

10) The perimeter of a rectangle is 42. If the length two times the width, what are the dimensions of the rectangle?

x = width

$2x$ = length

The length is 14 and the width is 7

$$42 = x + x + 2x + 2x$$
$$42 = 6x$$
$$7 = x$$

GRAPHITI

Key

Locate the following points on the graph below and connect them in order with straight line segments. Do not connect points separated by the word "STOP."

(X,Y) = (5,1), (6,2), (7,1), (8,2), (9,1) STOP (7,-1), (8,0), (9,-1), (10,0), (11,-1) STOP (-9,9), (-10,7), (-8,3), (-8,1), (-9,-1), (-8,-3), (-6,-1), (-4,9), (3,11), (4,5), (-6,-1), (3,11) STOP (-4,9), (4,5) STOP (0,7), (1,3), (2,0), (4,-4), (8,-10), (-1,11), (0,9), (1,11), (2,10), (3,11), (4,7), (5,11), (6,-8), (7,-11), (9,-8), (10,11), (11,-7), (12,-11).

HINT! On a windy day, you might want to do this!
Remember to connect the points as you work!