SUMMER MATH PACKET

INCOMING

Seventh Graders

NAME_____________________________

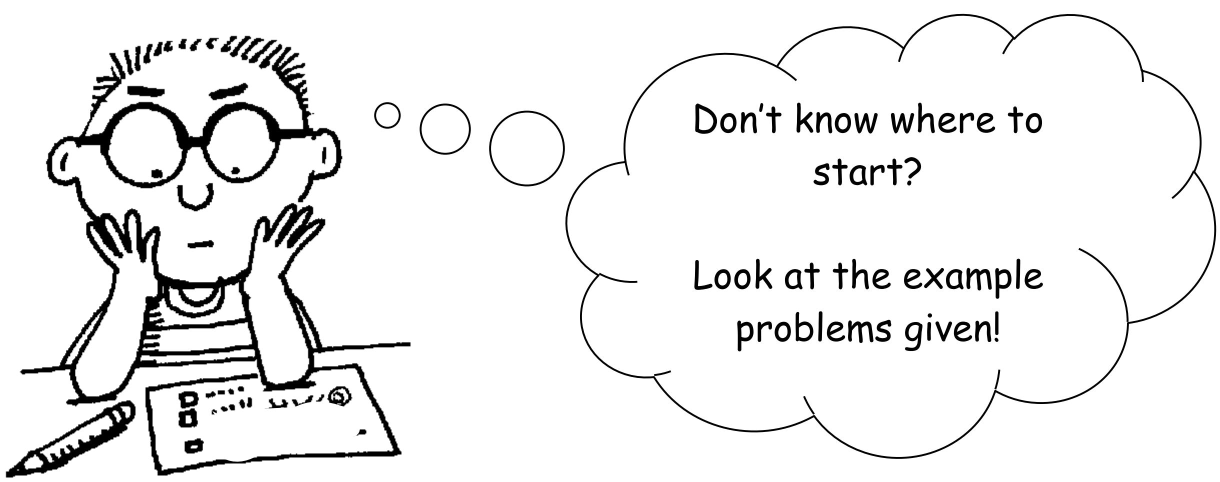
Packet Due: FIRST DAY OF SCHOOL

Directions

Helpful Websites:

www.coolmath.com
www.aplusmath.com
www.amathsdictionaryforkids.com
www.funbrain.com
www.math.com

- Complete each problem.
- Do NOT use a calculator.
- Show all work neatly in the actual packet whenever possible. If you need to use additional paper, make sure your work is clearly labeled and attached to the packet.
- All answers must be clearly labeled in the packet.
- All problems must be attempted. If you are stuck on a particular problem, you could ask an adult or classmate for assistance. If you are still unable to solve the problem, circle it and be prepared with questions for class in September.
- This packet will be graded on completion. You will also be assessed on this information after it has been reviewed in your math class.



Name ________________________

Decimal Operations

Adding and Subtracting Decimals

Adding and subtracting decimals is similar to adding and subtracting whole numbers.

Step 1: Rewrite the problem vertically

Step 2: Line up the decimal points

Step 3: Add/subtract the numbers like normal

Step 4: Bring the decimal point straight down

Remember, the decimal is hiding after the ones place in a whole number. Fill in zeros when needed.

Addition Example

61.2 + 15.3 =

```
  61.2
+ 15.3
  76.8
```

Subtraction Example

58.7 – 16 =

```
  58.7
- 16.0
  42.7
```

1) 68.5 + 93.1 = ________

2) 92.76 + 7.321 = ________

3) 4.3 + 26.15 + 3.009 = ________

4) 21.97 – 4.24 = ________

5) 0.76 – 0.37= _______

6) 79.2 – 2.53 = ________

7) 0.93 + 16.004 = _______

8) 18.745 – 9 = ________

9) 4.02 + 6.29 – 8 = _______

10) 15 – 0.8 + 1.7 = ________

Multiplying Decimals

Adding and subtracting decimals is similar to multiplying whole numbers. The key is to count the decimal places in each factor.

Step 1: Rewrite the problem vertically

Step 2: Line up the digits (not the decimal points)

Step 3: Multiply as you would with whole numbers

Step 4: Count the decimal places in each factor. The product (answer) has the same number of decimal places.

Remember, sometimes you have to add zeros as needed.

Multiplication Example

5.06 x 2.1 =	5.06	(2 decimal places)
	x 2.1	+ (1 decimal place)
	506	
	+ 10120	
	10.626	(3 decimal places)

11) 2.05 x 0.6 = _______

12) 14.2 x 7.7 = _______

13) 0.82 x 4.15 = _______

14) 5.96 x 1.2 = ________

15) 4.75 x 0.25 = _______

16) 3.8 x 19.2 = _______

17) 0.008 x 7 = _______

18) 3.3 x 3.03 = _______

19) 13 x 0.386 = _______

20) 8.91 x 0.05 = _______

Dividing Decimals

$$Dividend \div Divisor = Quotient \qquad Divisor\overline{)Dividend}^{\;Quotient}$$

Step 1: Rewrite as a long division problem. The first number (dividend) goes under the long division sign. The second number (divisor) goes on the outside.

Step 2: Bring the decimal point in the dividend straight up into the answer (quotient)

**If the divisor is a decimal, you must move the decimal point to the right until it becomes a whole number. Then move the decimal in the dividend to the right the same number of times. Then bring the decimal point straight up into the quotient.

Step 3: Divide as needed. Remember, no remainders.

Whole Number Divisor Division Example:

5.95 ÷ 7 = 0.85

```
   0.85
7)5.95
 - 0
   5 9
 - 5 6
     3 5
   - 3 5
       0
```

Decimal Divisor Division Example:

20.8 ÷ 2.6 = 8

```
2.6)20.8

      008
26)208
  - 0
    2 0
  -   0
    2 0 8
  - 2 0 8
        0
```

21) 27.12 ÷ 6 = ________

22) 1.92 ÷ 16 = ________

23) 33.12 ÷ 9 = ________

24) 1.08 ÷ 0.06 = ________

25) 33.99 ÷ 0.55 = ________

26) 12.72 ÷ 0.12 = ________

27) 12.45 ÷ 0.5 = ________

28) 30.82 ÷ 0.08 = ________

29) 0.8 ÷ 0.2 = ________

30) 11.25 ÷ 0.3 = ________

Fractions to Decimals to Percents

Fraction to Decimal:
Use division to turn a fraction into a decimal. Remember to divide the numerator by the denominator.

Example: $\frac{3}{4}$ = 3 ÷ 4 = $4\overline{)3.00}$ = 0.75

Decimals to Fractions:
Read the number using place values. Decide if the number ends in the tenths, hundredths, thousandths, etc. place. That will be your denominator. Reduce your fraction by dividing the numerator and denominator by the same number (remember whatever you do to do the top, you do to the bottom).

Example: 0.5 reads 5 tenths which is the fraction $\frac{5}{10} = \frac{1}{2}$

Decimals to Percents:
Remember to multiply your decimal by 100 (which moves the decimal 2 places to the right). Don't forget to add the percent sign!

Example: 0.32 = 0 . 3 2 = 32%

Percents to Decimals:
Reverse the procedure you performed for decimals to percents. This means you are dividing by 100 (which moves the decimal 2 places to the left).

Example: 45% = 4 5 . = 0.45

Fraction	Decimal	Percent
31)	32)	35%
$\frac{1}{8}$	33)	34)
35)	0.2	36)
37)	38)	30%
$\frac{5}{6}$	39)	40)

Fractions Operations

Adding and Subtracting Fractions

- You may want to rewrite the problem vertically.
- Find a common denominator.
- For subtraction, you may have to change a mixed number to an improper fraction.
- Add/subtract the numerators.
- Simplify your answer.

Example: $\frac{1}{6}+\frac{1}{3} = \frac{1}{6}+\frac{2}{6} = \frac{3}{6} = \frac{1}{2}$

$$\begin{array}{rr} \frac{1}{6} = & \frac{1}{6} \\ +\frac{1}{3} = & +\frac{2}{6} \\ \hline & \frac{3}{6} = \frac{1}{2} \end{array}$$

$1\frac{1}{2}-\frac{7}{8}=1\frac{4}{8}-\frac{7}{8}=\frac{12}{8}-\frac{7}{8}=\frac{5}{8}$

$$\begin{array}{rrr} 1\frac{1}{2} = & 1\frac{4}{8} = & \frac{12}{8} \\ -\frac{7}{8} = & -\frac{7}{8} = & -\frac{7}{8} \\ \hline & & \frac{5}{8} \end{array}$$

Mixed # to Improper Fraction: $1\frac{4}{8} = \frac{12}{8}$

41) $\frac{9}{12}+\frac{8}{12}$ = ______

42) $\frac{17}{20}-\frac{7}{20}$ = ______

43) $\frac{6}{9}+\frac{8}{9}$ = ______

44) $1\frac{19}{25}-\frac{4}{25}$ = ______

45) $\frac{2}{4}+\frac{4}{5}$ = ______

46) $\frac{8}{9}-\frac{3}{5}$ = ______

47) $2\frac{1}{3}+\frac{4}{8}$ = ______

48) $1\frac{1}{3}-\frac{2}{5}$ = ______

49) $\frac{2}{6}+\frac{3}{9}$ = ______

50) $\frac{11}{12}-\frac{1}{6}$ = ______

Multiplying and Dividing Fractions

- Remember, when multiplying and dividing fractions there is no need to have a common denominator.
- Change all whole and mixed numbers to improper fractions.
- If it is a <u>division</u> problem, don't forget to change it to multiplication, and flip the 2^{nd} fraction. (KCF- Keep, Change, Flip)
- Cross cancel then multiply straight across (numerator x numerator, then denominator x denominator).

Examples:

Multiplication: $2\frac{1}{4}\bullet\frac{2}{3}=\frac{9}{4}\bullet\frac{2}{3}=\frac{\overset{3}{\cancel{9}}}{\underset{2}{\cancel{4}}}\bullet\frac{\overset{1}{\cancel{2}}}{\underset{1}{\cancel{3}}}=\frac{3}{2}=1\frac{1}{2}$

Division: $3\frac{2}{3}\div4\frac{1}{2}=\frac{11}{3}\div\frac{9}{2}=\frac{11}{3}\bullet\frac{2}{9}=\frac{22}{27}$ (K C F)

51) $\frac{4}{5}\bullet\frac{2}{4}$ = ______

52) $\frac{4}{5}\bullet\frac{2}{8}$ = ______

53) $2\frac{4}{5}\bullet2\frac{1}{3}$ = ______

54) $7\frac{1}{5}\bullet\frac{2}{3}$ = ______

55) $3\bullet4\frac{1}{6}$ = ______

56) $\frac{3}{5}\div\frac{10}{12}$ = ______

57) $9 \div \frac{3}{7}$ = ______

58) $\frac{3}{8} \div \frac{1}{4}$ = ______

59) $4\frac{1}{6} \div 8\frac{1}{3}$ = ______

60) $3\frac{4}{5} \div 1\frac{9}{10}$ = ______

<u>Ordering Fractions and Decimals</u>

- Write the following numbers in order from **least to greatest**.
- Writing all fractions with a common denominator or using a number line might be helpful.

61) $\frac{2}{3}, \frac{1}{6}, \frac{3}{4}, \frac{1}{8}$ ________________

62) $\frac{5}{8}, \frac{3}{4}, \frac{2}{6}, \frac{1}{4}$ ________________

63) $\frac{4}{9}, 0.35, \frac{4}{6}, 0.72, \frac{4}{5}$ ________________

64) $\frac{7}{8}, 1\frac{1}{6}, \frac{5}{4}, \frac{3}{2}$ ________________

65) 0.49, 0.5, 0.05, 0.51, 0.049 ________________

Measures of Center

The **mean** is the **sum** of the numbers in a data set **divided** by **how many numbers** there are in the data set.

$$\text{Mean} = \frac{\text{sum of the numbers}}{\text{how many numbers}}$$

The **median** is the **middle** number in a data set, arranged from **least to greatest**.

The **mode** is the number that occurs **most often** in a data set. The numbers don't need to be in order.

Find the **mean**, **median**, and **mode** of the data set.

12, 16, 22, 18, 17, 13, 22

66) mean = ______________ 67) median = ______________ 68) mode = ______________

Measures of Center Application Problems

Lauren bought gifts that cost $24, $26, $20, $18. She has one more gift to buy and wants her mean cost to be $24. What should she spend on the last gift?

In order to have a **mean** of $24 on 5 gifts, the sum of all 5 gifts must be $24 x 5 = $120

The **sum of the first four gifts** Lauren already purchased is 24 + 26 + 20 + 18 = $88

The **last gift** should cost 120 – 88 = $32

69) Your test scores are 87, 86, 89, and 88. You have one more test this marking period. You want your average to be a 90. What score must you get on the last test?

____

70) Mary and her family share a family data plan for their cell phones. This month her mom used 450, her father used 380, and her little sister used 230 minutes. They want their average number of minutes to be 375 minutes. How many minutes should Mary use?

____

71) Thomas's bowling average needs to be at least a 250 in order to make his school's team. In his last 4 games, he bowled a 243, 271, 218, and 252. What does he need to bowl in his last game in order to make the team?

____

Measures of Variation

Measures of variation describe how values in a data set vary within a single number.

The **range** shows how far the data is spread and can be found by computing the difference between the least and the greatest values within a data set.

Quartiles split the data into four equal parts. To find the quartiles, first find the **median** (second quartile) of the data set.
The **first (lower) quartile** is the **median** of the **lower half** of the data.
The **third (upper) quartile** is the **median** of the **upper half** of the data.
The **interquartile range (IQR)** is **the difference** between the **upper** and **lower** quartiles.

4, 4, 5, 6, 7, 7, 9

lower quartile median upper quartile

IQR 9-2 = 7

The **mean absolute deviation (MAD)** describes how the data varies from the mean. To calculate the mean absolute deviation, find the **mean** of the data set, find the **difference** between each number in the data set and the mean, and find the **mean of the differences**.

4 + 4 + 5 + 6 + 7 + 7 + 9 = 42 $\quad$ 42 ÷ 7 = 6

6 - 4	2
6 - 4	2
5 – 4	1
6 – 4	2
7 - 6	1
7 - 6	1
9 - 6	3

2 + 2 + 1 + 2 + 1 + 1 + 3 = 12 $\quad$ 12 ÷ 7 = 1.714285…

MAD = 1.71

72) Find the range.
8, 14, 9, 3, 16

____

73) Find the range.
10, 24, 12, 20, 26, 37

____

74) Find the quartiles.

22, 25, 22, 21, 24, 21, 20, 24, 21, 15

Lower quartile ____ Median ____ Upper quartile ____ IQR ____

75) Find the mean absolute deviation.

11, 14, 13, 11, 12, 10

Algebraic Expressions

An **algebraic expression** is an expression that contains one or more **variables**. You can simplify some algebraic expressions by adding or subtracting **like terms. Like terms** have the same **variable** raised to the same **power**.
In order to simplify an expression, add or subtract the **coefficient** while keeping the **variable** the same.

A **coefficent** is a number next to a variable. In the problem below, 5 is the coefficient of x in the first term, and 6 is the coefficient of x in the second term.

$$5x + 6x$$

In the problem above, 5 is the coefficient of x in the first term, and 6 is the coefficient of x in the second term.

$$2x + 5x + 7 = 7x + 7$$

In order to simplify an expression, add or subtract the **coefficient** while keeping the **variable** the same:

$$2x + 5x + 7 = 7x + 7$$

So, $5x + 6x = 11x$

Combine the like terms.

76) $12z - 3z$

77) $10b + 12b$

78) $9p + 4p + 12 + 8$

79) $7p + 6 - 5$

80) $11v + 2p + 7$

81) $9f + 32 + 7f$

82) $5a + 8a - 2a + 6a$

83) $-3a + 9c + 8c$

84) $-8x - 2x + 3y - 10y$

Distributive Property

Another way of simplifying expressions is called using the **Distributive Property.**
The distributive property "distributes" or is multiplied by all of the values inside the parenthesis.

$3(4x+1)$

In this problem, the 3 is **distributed** to the terms 4x and 1

$3(4x+1) = 3(4x) + 3(1) = 12x + 3$

85) $7(3x+3)$

86) $2(m+7) +3m-3$

87) $5(n+2) -3$

88) Can m^2+m be simplified further? Why or why not?

89) A plumber use the expression $75 + 50h$ to determine how many dollars to charge for a job that lasts h hours. If a plumbing job lasts 5 hours ($h=5$), how much would a plumber charge?

Solving One Step Equations

To solve an equation with a variable, you need to remember this 3 step process:

- **Isolate the variable**
- **Perform the inverse operation**
- **What is performed to the one side of the equation is also performed on the other**

$$\begin{array}{rcl} x + \cancel{5} & = & 10 \\ -5 & & -5 \\ \hline x & = & 5 \end{array}$$

$$\frac{6y}{6} = \frac{18}{6}$$

$$y = 3$$

$$\begin{array}{rcl} x - \cancel{5} & = & 10 \\ +5 & & +5 \\ \hline x & = & 15 \end{array}$$

$$(4)\frac{n}{4} = 10\ (4)$$

$$n = 40$$

90) $t + 2 = 18$

91) $y + 32 = 90$

92) $d - 5 = 30$

93) $a - 7 = 7$

94) $5x = 40$

95) $12t = 24$

96) $\frac{b}{10} = 5$

97) $\frac{x}{22} = 2$

98) $\frac{r}{12} = 4$

Writing Inequalities

An **inequality** is a mathematical sentence that uses an equality symbol to indicate that two quantities are not equal.

>	<	≥	≤
Greater than	Less than	At least	At most

Translate the following into inequalities.

99) 14 is greater than a

100) b is less than or equal to 8

101) 6 is less than the product of f and 20

102) The sum of t and 9 is greater than or equal to 36

103) 7 more than w is less than or equal to 10

104) 19 decreased by p is greater than or equal to 2

105) Fewer than 12 items

106) No more than 50 students

107) At least 275 people attended the play

Solving Inequalities

40 ≥ 5d

Which solution set satisfies this inequality? {5, 6, 7, 8}

To determine the solutions to inequalities, **substitute** the numbers in the solution set into the inequality and see which numbers make the sentence true.

40 ≥ 5(8)	40 ≥ 6(8)	40 ≥ 7(8)	40 ≥ 8(8)
40 ≥ 40	40 ≥ 48	40 ≥ 56	40 ≥ 64
YES	NO	NO	NO

{5} is the only solution.

108) a + 10 > 6 {2, 4, 6}

109) 4x < 5 {1, 2, 3}

110) $j - 2 \geq 8$ {6, 8, 10}

111) $\frac{x}{5} \geq 5$ {15, 20, 25}

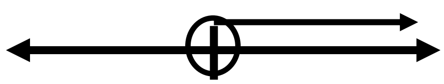
Graphing Inequalities

Inequalities have an infinite number of solutions, so when we graph inequalities, we must show that.

Put a point on your number of interest on your number line. If the number is part of the solution set, you graph it with a closed circle. If the number is not part of the solution, you graph it with an open circle.

Extend and line from the point in the direction that shows number that fit the solution set.

Ex: $x > 2$ (x is greater than 2)



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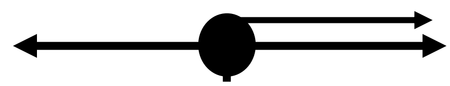
$x \geq 2$ (x is greater than or equal to 2)



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The line was extended to the right for both examples to show numbers greater than 2.

Graph the following inequalities.

112) $a > 5$

113) $x \leq 6$

114) $w > 8.5$

115) $y \leq \frac{1}{2}$

116) Customers spent less that 10 minutes in line to check out at the supermarket.

Inequality: ____________________

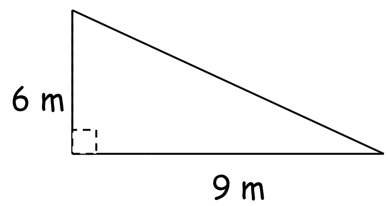
117) Children must be 48 inches or taller to ride the roller coaster.

Inequality: ____________________

Basic Geometry

Use the *formula sheet* to find the area AND perimeter of each shape. Round to the nearest hundredths place when necessary. Use 3.14 for π (pi).

Example:



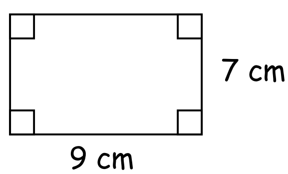
Triangle

$A = \frac{1}{2}\ b\ h$

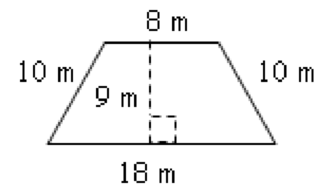
$A = \frac{1}{2} \cdot 9 \cdot 6$

$A = 27\ m^2$

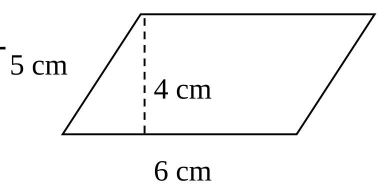
118) A = ________



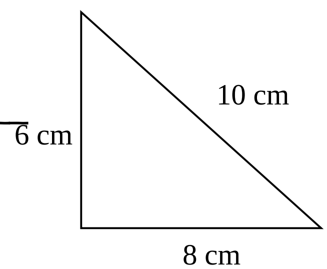
119) A = ________



120) A = ________



121) A = _______



122-123) A square has an area of 81 cm^2. What is the length of each side? What is the perimeter of the square? Side = ___________ Perimeter = ___________

Volume

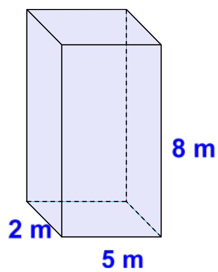
Volume is the amount of space occupied by a 3-dimensional figure. You may also remember talking about volume as the number of cubic units needed to fill a 3-dimensional figure.

Formula

V= *lwh, where l = length, w = width, h = height*

Multiply the length, width, and height of the rectangular prism.

Ex:

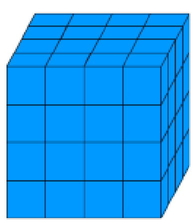


V=lwh

V= (2)(5)(8)

V= 80 m^3

Each of the small cubes in the prism shown has a length, width and height of $\frac{1}{4}$ in.



There are two methods you can use to approach these problems. The first method is to find the volume of one cube and multiply it by the number of cubes that make up the prism.

The second method is to use the length, width, and height of one cube to determine the length, width, and height of the whole prism.

Method 1:

V= $\left(\frac{1}{4}\right)\left(\frac{1}{4}\right)\left(\frac{1}{4}\right) = \frac{1}{64}\ x\ 64\ cubes = \frac{64}{64} = 1\ in^{3}$

Method 2:

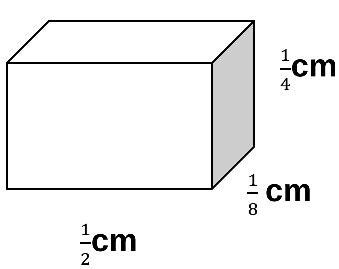
V= $\left(\frac{4}{4}\right)\left(\frac{4}{4}\right)\left(\frac{4}{4}\right) = \frac{64}{64} = 1\ in^{3}$

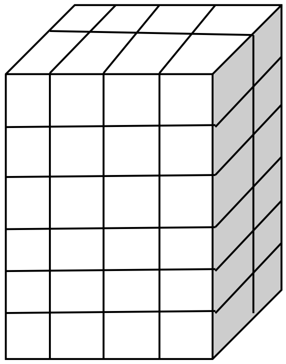
Find the volume of the following:

124) A $\frac{2}{3}$ m x $\frac{1}{6}$ m x $\frac{2}{5}$ m rectangular prism

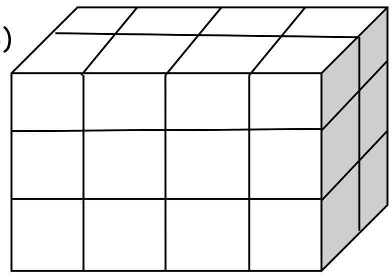
125) A cube with edge of $\frac{5}{7}$ ft

126)

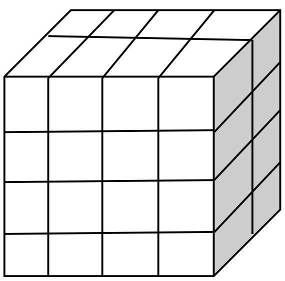


127) 

The length, width and height of one of the small cubes is $\frac{1}{3}$ m.
Find the volume of the figure.

128) 

The length, width and height of one of the small cubes is $\frac{3}{5}$ cm.
Find the volume of the figure.

129) 

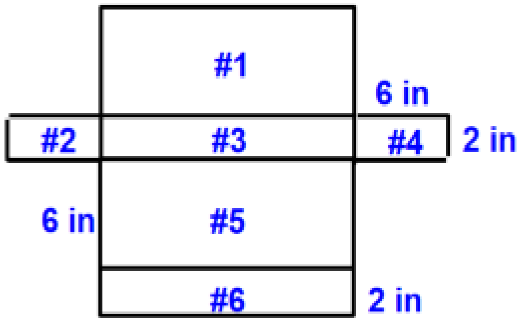
The length, width and height of one of the small cubes is $\frac{1}{9}$ in.
Find the volume of the figure.

Surface Area

Surface area is the sum of the areas of all the outside faces of a 3-dimensional figure.

To find the surface area of a figure, you must find the area of each face of a figure and add them together.

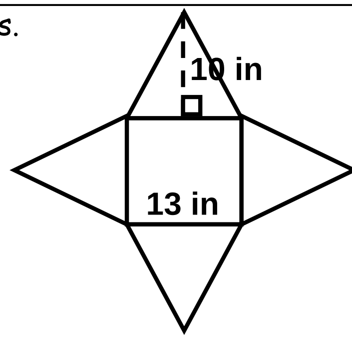
Example



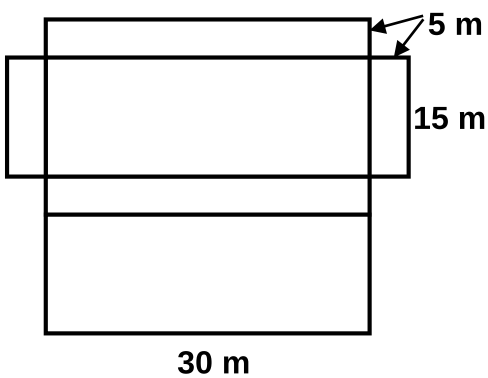
$$SA = \#1 + \#2 + \#3 + \#4 + \#5 + \#6$$
$$SA = 42 + 12 + 14 + 12 + 42 + 14$$
$$SA = 136in^2$$

Find the surface area of the figures given their nets.

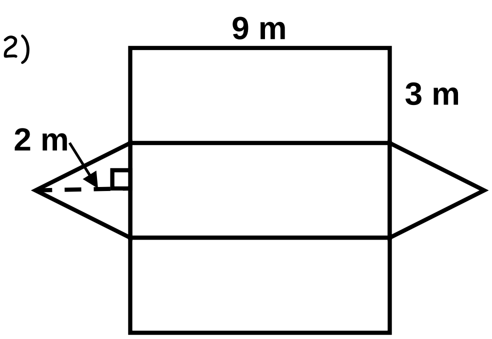
130)



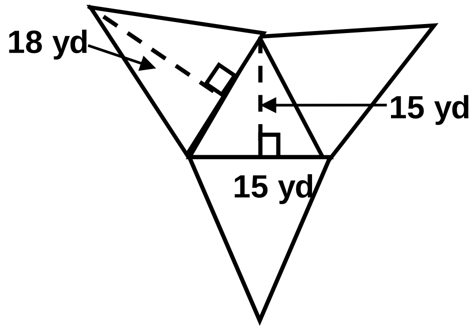
131)



132)

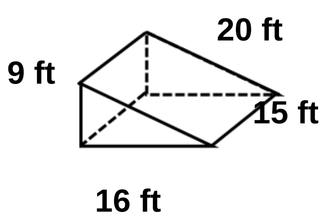


133)

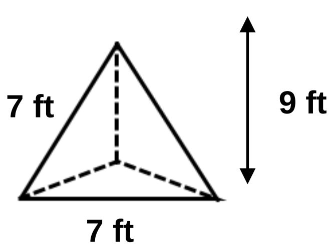


Draw the net to find the surface area of each figure.

134)



135)



Ratios

A ratio is a comparison between two numbers and can be written in three ways.

5 to 6 5:6 $\frac{5}{6}$

The order of the ratio is important because the first number being compared comes first in the ratio. Ratios should always be written in simplest form. You can simplify a ratio by dividing both numbers by the greatest common factor (GCF).

$$\frac{10}{12} \div \frac{2}{2} = \frac{5}{6}$$

Equivalent ratios are ratios that represent the same values. You can create equivalent ratios by multiplying or dividing both numbers in the ratio by a whole number.

$$\frac{5}{6} \times \frac{5}{5} = \frac{25}{30} \quad and \quad \frac{12}{14} \div \frac{2}{2} = \frac{6}{7}$$

136) Write each ratio **three ways**. Represent each ratio in **simplest form**.
Olson Middle School seventh graders attend a trip to the Camden Riversharks game. There were 40 female students and 60 male students. What is the ratio of males to females on the 7^{th} grade trip?

______________ ______________ ______________

137) Write each ratio **three ways**. Represent each ratio in **simplest form**.
Olson has 175 laptop computers and 50 desktop computers in the school building. What is the ratio of desktop computers to all computers in the building?

______________ ______________ ______________

138) Create three equivalent ratios for the following scenario.
For every 2 hours Kristin works, she earns $16.

______________ ______________ ______________

139) Create **three** equivalent ratios for the following scenario.
The AMC movie theater sells adult and child tickers. For every 2 adult tickets they sell, 1 child ticket is sold.

______________ ______________ ______________

Rates and Unit Rates

A rate is a ratio that compares two different units. An example of a rate is 60 miles traveled per 2 hours.

A unit rate is a rate in which the second measurement or amount is one unit. An example of a unit rate is $5 per 1 ounce. You can use unit rates to solve problems by setting up a proportion and cross multiplying.

Katie runs 6 meters in 4 seconds. At that rate, how far does Katie run in 10 seconds?

$$\frac{meters}{seconds} = \frac{6}{4} = \frac{x}{10}$$

$$6 \times 10 = 60 \div 4 = 15$$

$$Katie\ travels\ 15\ meters\ in\ 10\ seconds.$$

140) Nate reads 90 pages in 6 days. How many pages does Nate read in 3 days?

$$\frac{pages}{days} = \underline{\qquad} = \underline{\qquad}$$

141) A plane travels at 615 miles per hour. How far does the plane travel in 4 hours?

$$\frac{miles}{hours} = \underline{\qquad} = \underline{\qquad}$$

142) At Chipolte, a burrito costs $6.25. How much do 7 burritos cost?

$$\frac{money}{burritos} = \underline{\qquad} = \underline{\qquad}$$

143) Lisa can type 163 words in three minutes. How many words can she type per minute?

$$\frac{words}{minutes} = \underline{\qquad} = \underline{\qquad}$$

Percentages

Substitute your values into the proportion to complete percentage problems.

$$\frac{is}{of} = \frac{\%}{100}$$

The number that has a percent sign attached to it gets substituted into the top right portion of the proportion labeled "%."
The number that is next to "is" gets substituted into the top left portion of the proportion labeled "is."
The number that is next to "of" gets substituted into the bottom left portion of the proportion labeled "of."
The proportion should have all numbers filled in but one. Label this blank portion "x."

To solve the proportion, cross-multiply and divide.

Example: 5 is what % of 20?

is → 5, of → 20, % → x

$$\frac{5}{20} = \frac{x}{100}$$

(cross-multiply means multiply your diagonals)

$$5 \bullet 100 = 20x$$

$$\frac{500}{20} = \frac{20x}{20}$$

(Remember, the faction bar means divide)

$$25 = x$$

25%

144) What is 25% of 400? ___________

145) What is 15% of 60? ___________

146) 96 is 32% of what? ___________

147) What is 1% of 40? ____________

148) $48.00 is 80% of what? ___________

149) 3% of 12 is what? ___________

Extended-Constructed Response: Please show your work and explain your answer to each of the following questions.

150) The chart below shows the amounts Jim spent on lunch this week.

Cost of Jim's lunches (dollars)		
4	5	8
4	7	9

What is the median amount spent?

What is the range of the amount spent?

Add two numbers to the data set that will make change the range to $7. Explain your thinking.

151) Mrs. Kim is putting a small wooden fence along her backyard. The length of her backyard is 11 yards. Each wooden plank is 2.5 inches wide. How many wooden planks will Mrs. Kim need to fence off the length of her backyard? Justify your thinking.