

## Summer Math – Incoming 7<sup>th</sup> grade

Complete each of the sections to the best of your ability. Show your work.  
Worth 2 test grades – Due 1<sup>st</sup> day of school

### Understanding whole numbers

millions period			thousands period			ones period		
hundreds	tens	ones	hundreds	tens	ones	hundreds	tens	ones
		4	2	0	1	5	7	8

Standard form = 4,201,578

Expanded form = 4,000,000 + 200,000 + 1,000 + 500 + 70 + 8

Write each number in standard form

1. Six thousand one hundred four
2. Fifteen million twenty-one thousand
3. Sixty thousand one hundred twelve

Write each decimal in words

1. 0.2
2. 0.11
3. 0.37
4. 0.4
5. 0.50

Use  $>$ ,  $<$  or  $=$  to show that a decimal is greater than, less than, or equal to

i.e.  $4.0 > 3.8$

$4.0 < 4.2$

$4.0 = 4$

1.  $.01 \square .15$
2.  $.25 \square .21$
3.  $.08 \square .40$
4.  $6.12 \square 6.099$
5.  $0.207 \square 0.27$

Use place value to order the decimals from least to greatest

1. 3.46, 3.64, 3.59
2. 1.09, 1.9, 1.1
3. 22.97, 21.79, 22.86

Round each decimal to the nearest hundredth

1. 1.679
2. 32.9744

Add the decimals

1.  $0.9 + 6.7$
2.  $3.1 + 9.4$
3.  $4.88 + 8.19$

Subtract the decimals

1.  $8.5 - 4.2$
2.  $7.2 - 3.05$
3.  $5.07 - 2.8$

Multiply the decimals

- |                          |                         |                        |
|--------------------------|-------------------------|------------------------|
| 1.) $0.9$                | 2.) $3.1$               | 3.) $6.22$             |
| $\underline{\times 2.8}$ | $\underline{\times 77}$ | $\underline{\times 8}$ |

Divide the decimals

1.  $3 \overline{)1.35}$
2.  $9 \overline{)13.86}$
3.  $1.5 \overline{)84}$

Order of operations

- Find the value of each expression
  1.  $3 + (4 + 1) \times 2 =$
  2.  $24 \div (5 + 3) - 2 =$
  3.  $2 + 6 \times 3 \div 3 =$

Variables

- Evaluate each expression for the given variable
  1.  $3t - 4$        $t = 8$
  2.  $7c$        $c = 6$
  3.  $5y - 10$        $y = 6$

Writing algebraic expressions

- i.e. a) the sum of  $m$  and  $17 \rightarrow m + 17$   
b) 3 times  $w \rightarrow 3w$   
c) the quotient of  $q$  and  $6 \rightarrow q \div 6$

1. 6 increased by  $y$
2. the quotient of 8 and  $e$
3.  $R$  divided by 2

Solve each equation for the variables

1.  $19 + T = 51$

2.  $d - 125 = 75$
3.  $10w = 150$

### Exponents

- Name the base and the exponent

- |                |                |                |
|----------------|----------------|----------------|
| 1.) $3^6$      | 2.) $6^2$      | 3.) $8^4$      |
| base _____     | base _____     | base _____     |
| exponent _____ | exponent _____ | exponent _____ |

- Write each expression using an exponent

- 4.)  $9 \times 9 \times 9$       5.)  $6 \times 6 \times 6 \times 6 \times 6$

- Simplify each expression

- 6.)  $4^2 + 5^2$   
 7.)  $3^5$   
 8.)  $6^2 + 4^2$

### Prime Numbers

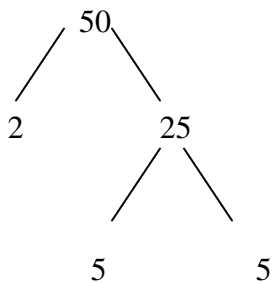
- Prime numbers have exactly two factors, the number itself and 1
- Composite numbers have more than two factors

Tell whether number is prime or composite

1. 21 \_\_\_\_\_
2. 43 \_\_\_\_\_
3. 41 \_\_\_\_\_
4. 138 \_\_\_\_\_
5. 83 \_\_\_\_\_

Factorization – using the factor tree

i.e.



- Find the factorization of each number
  1. 21
  2. 48

3. 103

### Greatest Common Factors (G C F )

i.e. 12: 1, 2, 3, 4, 6, 12

18: 1, 2, 3, 6, 9, 18

GCF = 6

Find the GCF of each set of numbers

1. 21, 60

2. 15, 45

3. 32, 40

### Equivalent Fractions

➤ Equivalent fractions are fractions that name the same amount

- Write two fractions equivalent to each fraction

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

2.  $\frac{3}{11}$

3.  $\frac{3}{7}$

➤ Simplest form – divide the numerator and denominator by their GCF

- Write each fraction in simplest form

1.  $\frac{12}{24}$

2.  $\frac{130}{170}$

3.  $\frac{12}{16}$

➤ Adding and subtracting fractions and mixed numbers

1.  $\frac{2}{3} + \frac{3}{5}$

2.  $\frac{6}{8} + \frac{4}{9}$

$$3. 1 \frac{2}{3} \\ - \frac{5}{6}$$

### Least Common Multiple

- i.e. 8: 8, 16, 24, 32, 40  
 12: 12, 24, 36, 48                      24 is the LCM

- List multiples to find the LCM of each pair of numbers
  - 1.) 4:                      2.) 6:                      3.) 15:
  - 5:                        7:                        25:

### Fractions

Multiplication: Find the product

1.  $\frac{1}{9}$  of  $\frac{2}{3}$

2.  $\frac{5}{8} \cdot 6$

3.  $\frac{3}{4} \cdot \frac{2}{5}$

Division : Find the Quotient

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

2.  $6 \div \frac{2}{5}$

### Percents, Fractions, and Decimals

- Write each percent as a decimal and as a fraction in simplest form

1. 30%
2. 38%
3. 16%

- Finding a percent of a number  
 i.e. 70% of 90 = 63

$$\frac{70}{100} \times \frac{90}{1}$$

$$\frac{7}{10} \times \frac{90}{1} = \frac{630}{10} = 63\%$$

Find each answer

1. 75% of 40
2. 70% of 70
3. 37% of 400

## Mean, Median, and Mode

Mean = a set of data added together to find the sum divided by the number of data items (average)

Median = the median of a data set is the middle value when the data are arranged in numerical order (middle)

Mode = the mode of a data set is the item in the data set

Find the Mean of each set of data

1. 8, 12, 6, 9, 5
2. 3.4, .53, 1.3, 2.9, 1.47, 0.24

Find the Median of each set of data

3. 23, 18, 67, 32, 54, 41, 70, 11, 56, 33, 41, 38
4. -4, -1, -8, -5, -6, -2, 7, 2, 0, -1, -7, 2

Find the Mode(s)

5. 51, 58, 54, 58, 51, 57, 55, 58, 51, 54
6. red, blue, white, white, red, red, red, blue, white, blue

## Integers

Find the sum

1.  $-14 + (-5)$
2.  $5 + (-12)$
3.  $-1 + (-6)$
4.  $-7 + 3$

Find the difference

1.  $-7 - (-13)$
2.  $21 - (-7)$
3.  $-3 - (-5)$

Find the product

1.  $-35 \times (-7)$
2.  $-11 \times 2$
3.  $-10 \times (-2)$
4.  $7 \times (-4)$

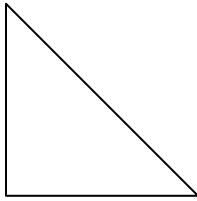
Find the quotient

1.  $18 \div (-6)$
2.  $-50 \div (-25)$

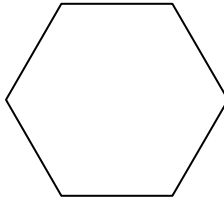
**Problem Solving**

1. On Friday Rosa borrowed \$10.00 from her sister. The next day she paid back \$5.00. Then on Monday she borrowed \$4.00 more. How much does Rosa owe?
2. At midnight, the temperature was  $-12^{\circ}\text{F}$ . By 6:00 a.m. the next morning the temperature had risen 19 degrees. What was the temperature at 6:00 a.m.?

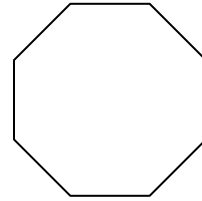
**Classifying Polygons** – Name the following polygons



1.



2.



3.