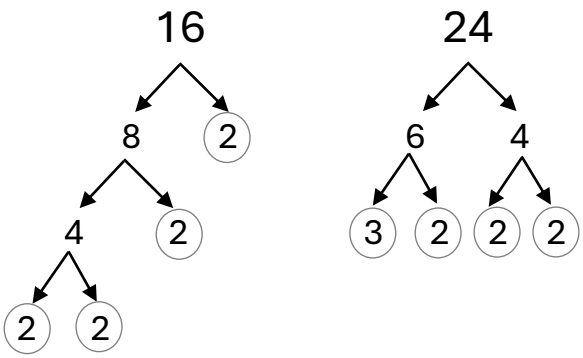
Name: _____

Greatest Common Factor (GCF)

Directions: Find the greatest common factor of the two integers.

Example: 16, 24

Make a prime factor tree.



What prime factors do they have IN COMMON? A 2, 2, and 2.

Multiply their common prime factors together to get the GCF: $2 \times 2 \times 2 =$ 8

1. 22, 14	2. 21, 28	3. 45, 60
4. 14, 56	5. 12, 30	6. 36, 44

Name: _____

Least Common Multiple (LCM)

Directions: Find the least common multiple of the two integers.

Example: 20, 8

List the multiples of each number until you find the first match.

20: 20, (40)

8: 8. 16, 24, 32, (40)

LCM = 40

1. 10, 16	2. 14, 4
3. 6, 9	4. 9. 18
5. 15, 18	6. 10, 15

Name: _____

Reducing Fractions

Directions: Reduce the fractions.

Example: $\frac{24}{32}$

* Divide numerator and denominator by the Greatest Common Factor

$$\frac{24 \div 8}{32 \div 8} = \frac{3}{4}$$

1. $\frac{12}{18}$	2. $\frac{45}{72}$
3. $\frac{60}{160}$	4. $\frac{36}{42}$
5. $\frac{45}{63}$	6. $\frac{30}{42}$

7. $\frac{12}{30}$	8. $\frac{6}{48}$
9. $\frac{18}{24}$	10. $\frac{18}{45}$
11. $\frac{12}{16}$	12. $\frac{30}{48}$
13. $\frac{6}{18}$	14. $\frac{27}{45}$
15. $\frac{54}{63}$	16. $\frac{20}{140}$

Name: _____

Improper to Mixed Fractions

Directions: Turn the improper fraction into a mixed number.

Example: $\frac{23}{5}$

$\frac{23}{5} = \frac{5}{5} + \frac{5}{5} + \frac{5}{5} + \frac{5}{5} + \frac{3}{5} = 1 + 1 + 1 + 1 + \frac{3}{5} = 4\frac{3}{5}$

1. $\frac{9}{2}$	2. $\frac{19}{4}$
3. $\frac{49}{6}$	4. $\frac{17}{3}$
5. $\frac{27}{4}$	6. $\frac{11}{5}$

7. $\frac{13}{2}$	8. $\frac{16}{5}$
9. $\frac{7}{4}$	10. $\frac{25}{3}$
11. $\frac{23}{5}$	12. $\frac{14}{3}$
13. $\frac{29}{4}$	14. $\frac{33}{5}$
15. $\frac{21}{4}$	16. $\frac{50}{7}$

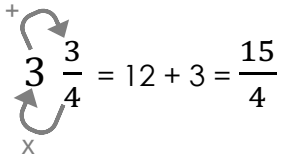
Name: _____

Mixed to Improper Fractions

Directions: Turn the mixed number to an improper fraction.

Example: $3\frac{3}{4}$

- Multiply the denominator to the whole number, then add the numerator.
- Plut this number over the original denominator.



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

7. $2\frac{1}{2}$	8. $3\frac{2}{3}$
9. $4\frac{1}{6}$	10. $7\frac{2}{5}$
11. $8\frac{3}{5}$	12. $1\frac{1}{6}$
13. $3\frac{1}{7}$	14. $1\frac{2}{5}$
15. $4\frac{3}{4}$	16. $8\frac{2}{3}$

Name: _____

Adding Improper Fractions

Directions: Add the fractions. Write answer in reduced improper form.

Example: $\frac{2}{3}+\frac{1}{5}$

* Find a common denominator.

$$\frac{2\cdot5}{3\cdot5}+\frac{1\cdot3}{5\cdot3} = \frac{10}{15}+\frac{3}{15} = \frac{13}{15}$$

* Check to see if the fraction can be reduced.

1. $\frac{5}{8}+\frac{1}{2}$	2. $\frac{2}{3}+\frac{1}{2}$
3. $\frac{6}{7}+\frac{3}{4}$	4. $\frac{3}{2}+\frac{1}{4}$
5. $\frac{11}{6}+\frac{4}{5}$	6. $\frac{1}{3}+\frac{5}{7}$

Name: _____

Subtracting Improper Fractions

Directions: Subtract the fractions. Write answer in reduced improper form.

Example: $\frac{2}{3} - \frac{1}{5}$

* Find a common denominator.

$$\frac{2\cdot5}{3\cdot5} - \frac{1\cdot3}{5\cdot3} = \frac{10}{15} - \frac{3}{15} = \frac{7}{15}$$

* Check to see if the fraction can be reduced.

1. $\frac{16}{9} - \frac{5}{4}$	2. $\frac{17}{11} - \frac{3}{4}$
3. $\frac{2}{5} - \frac{1}{3}$	4. $\frac{5}{3} - \frac{1}{6}$
5. $\frac{7}{8} - \frac{3}{4}$	6. $\frac{18}{11} - \frac{13}{8}$

Name: _____

Adding Mixed Fractions

Directions: Add the fractions. Write answer in reduced mixed form.

Example: $2\frac{2}{3} + 3\frac{4}{5}$

- Change mixed numbers to improper
- Get a common denominator
- Add and change back to a mixed number.

$2\frac{2}{3} + 3\frac{4}{5} \rightarrow \frac{8}{3} + \frac{19}{5} = \frac{8 \cdot 5}{3 \cdot 5} + \frac{19 \cdot 3}{5 \cdot 3} = \frac{40}{15} + \frac{57}{15} = \frac{97}{15} = 6\frac{7}{15}$

1. $5\frac{7}{8} + 4\frac{1}{2}$	2. $5\frac{4}{9} + 1\frac{1}{6}$
3. $5\frac{3}{4} + 1\frac{1}{4}$	4. $5\frac{4}{5} + 3\frac{1}{8}$
5. $4\frac{1}{2} + 2\frac{3}{4}$	6. $4\frac{5}{6} + 2\frac{1}{4}$

Name: _____

Subtracting Mixed Fractions

Directions: Subtract the fractions. Write answer in reduced mixed form.

Example: $4\frac{2}{3} - 2\frac{4}{5}$

- Change mixed numbers to improper
- Get a common denominator
- Add and change back to a mixed number.

$4\frac{2}{3} - 2\frac{4}{5} \rightarrow \frac{14}{3} - \frac{19}{5} = \frac{14 \cdot 5}{3 \cdot 5} - \frac{19 \cdot 3}{5 \cdot 3} = \frac{70}{15} - \frac{57}{15} = \frac{13}{15}$

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

Name: _____

Multiplying Fractions

Directions: Multiply the fractions. Write answer in reduced improper form.

Example: $\frac{3}{5} \times \frac{5}{9}$

- Multiply straight across the top and the bottom.
- Reduce your answer

$\frac{3}{5} \times \frac{5}{9} = \frac{15 \div 15}{45 \div 15} = \frac{1}{3}$

1. $\frac{1}{2} \times \frac{10}{7}$	2. $\frac{3}{2} \times \frac{5}{3}$
3. $\frac{7}{4} \times \frac{14}{9}$	4. $\frac{12}{7} \times \frac{3}{2}$
5. $\frac{3}{5} \times \frac{16}{9}$	6. $\frac{5}{4} \times \frac{3}{2}$

Name: _____

Dividing Fractions

Directions: Divide the fractions. Write answer in reduced improper form.

Example: $\frac{4}{5} \div \frac{1}{3}$

- Flip the second fraction and multiply

$\frac{4}{5} \times \frac{3}{1} = \frac{12}{5}$

1. $\frac{1}{2} \div \frac{7}{4}$	2. $\frac{11}{7} \div \frac{3}{2}$
3. $\frac{1}{3} \div \frac{5}{8}$	4. $\frac{3}{4} \div \frac{4}{9}$
5. $\frac{5}{6} \div \frac{4}{9}$	6. $\frac{7}{5} \div \frac{5}{4}$

Name: _____

Adding and Subtracting Decimals

Directions: Add or subtract the decimals.

Example 1: 2.35 + 4.66

- Line up your decimal point vertically
- Add place values together from right to left, carrying over when needed.

$$\begin{array}{r} {\scriptstyle 1\ \ 1\ \ \ } \\ 2.35 \\ +\ 4.66 \\ \hline +\ 7.01 \end{array}$$

Example 2: 8.35 - 4.66

- Line up your decimal point vertically
- Subtract place values together from right to left, borrowing when needed.

$$\begin{array}{r} {\scriptstyle 7\ 12\ 15} \\ 8.35 \\ -\ 4.66 \\ \hline +\ 3.69 \end{array}$$

1. 4.58 + 3.12	2. 11.34.+ 8.16
3. 3.75 + 5.78	4. 2.91 + 14.05
5. 8.46 - 4.88	6. 12.15 - 11.39

Name: _____

Multiplying Decimals

Directions: Multiply the decimals.

Example: 4.3 x 2.61

- Line up problem vertically, aligning the farthest right digit, despite the decimal point.
- Multiply using the standard algorithm, ignoring the decimal point.
- Count how many digits came after the decimals in both numbers. Place the decimal in your answer that many spaces from right to left.

```
   4.3
 x2.61
 ------
    43
 2580
+8600
 ------
11.223
```

1. 5.6 x 2	2. 3.5 x 8.9
3. 3 x 1.8	4. 0.4 x 0.5

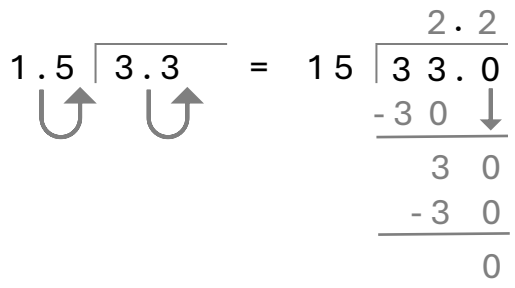
Name: _____

Dividing Decimals

Directions: Divide the decimals.

Example: $3.3 \div 1.5$

- Set up the problem as long division.
- Move the decimal point to the right of each digit until the divisor (the outside number) is a whole number.
- Move the decimal inside the division box straight up in your answer.



1. $7.8 \div 1.3$	2. $9.24 \div 1.2$
3. $9.9 \div 7.5$	4. $5.8 \div 2.9$

Name: _____

Percent, Fraction, Decimal

Directions: Convert each fraction, decimal, or percent into the other two forms.

Starts as Fraction: $\frac{1}{4}$

to Decimal:
*Divide numerator by denominator.
$1 \div 4 = 0.25$

to Percent:
*Multiply both top and bottom to make the denominator 100. The top is your percent.
$\frac{1}{4} = \frac{1 \cdot 25}{4 \cdot 25} = \frac{25}{100} = 25\%$

Starts as Decimal: 0.45

to Percent:
* Move the decimal
.45 = 45%

to Fraction:
* Say the place value out loud and write is as a fraction. Reduce.
"45 hundredths" = $\frac{45}{100} = \frac{9}{20}$

Starts as Percent: 80%

to Fraction:
*Write percent over 100 and reduce.
$\frac{80}{100} = \frac{4}{5}$

to decimal:
*Move the decimal two to the left.
80% → 0.80

	Percent	Fraction	Decimal
1)	36%		
2)		$\frac{7}{10}$	

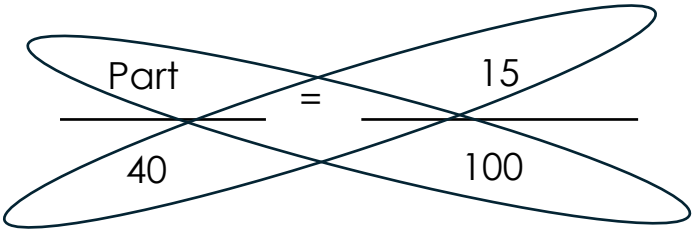
	Percent	Fraction	Decimal
3)			0.87
4)		$\frac{18}{25}$	
5)	20%		
6)		$\frac{13}{20}$	
7)			0.60
8)	78%		
9)			0.38
10)		$\frac{2}{5}$	

Name: _____

Percent of a Number

What is 15% of 40?

$$\frac{\text{Part}}{\text{Whole}} = \frac{\text{Percent}}{100}$$



$100x = 600$

$x=6$

*You will always be missing one of the 4 parts of the proportion. Fill in the 3 knowns and the missing part is your variable. Cross multiply to solve.

1. 35% of 37 is what?	2. 3.8 is what percent of 21?
3. 7.9 is 97% of what?	4. 23 is what percent of 39?

Name: _____

Distributive Property

$a(b+c) = ab+ac$

Examples:

1. $3(x+5) = 3x+15$

2. $-5(2m-10) = -10m+50$

1. $2(3p-5)$	2. $-5(3r+6)$
3. $3(-2s-9)$	4. $7(2x-11)$
5. $-4(-4y+8)$	6. $6(3k-10)$
7. $-3(12m-4)$	8. $10(-9f-5)$
9. $6(-2x+6y)$	10. $-7(11a-2b)$

Name: _____

Evaluating Expressions

- Substitute the value of the variable, in place of the variable.

- Use the order of operations to evaluate.

$x^2 + z \div 3;\ when\ x = 1\ and\ z = 3$

$(1)^2 + 3 \div 3$

$1 + 3 \div 3$

$1 + 1$

2

1. $h + 3i;\ when\ h = 1\ and\ j = 5$	2. $y - (x - 2);\ when\ x = 4\ and\ y = 6$
3. $a + b + a;\ when\ a = 3\ and\ p = 2$	4. $y + x \div 5; when\ x = 5\ and\ y = 1$
5. $m^2 + p^2; when\ m = 6\ and\ p = 2$	6. $b + b + a \div 4; when\ a = 4\ and\ b = 3$

Name: _____

One-Step Equations

Do the inverse (opposite) of whatever operation is being performed to the variable, on both sides. Get the variable by itself.

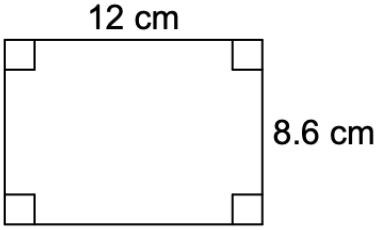
$$x + 4 = 11$$
$$-4 \quad -4$$
$$x = 7$$

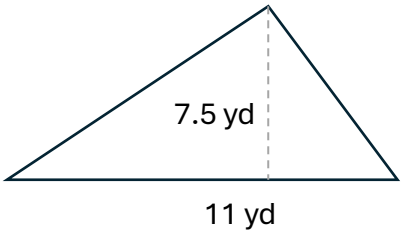
1. $n - 2 = -16$	2. $90 = -15m$
3. $-13 + x = 7$	4. $13 = n - 1$
5. $n - 20 = -30$	6. $-60 = -10n$
7. $11 + x = -9$	8. $-15 = \frac{r}{4}$
9. $\frac{x}{3} = 14$	10. $24 = 5 + v$

Name: _____

Area of Rectangles and Triangles

Directions: Find the area of each rectangle or triangle.





$A = lw$

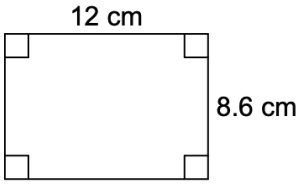
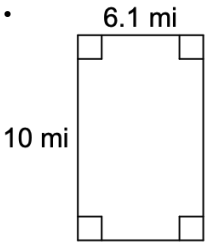
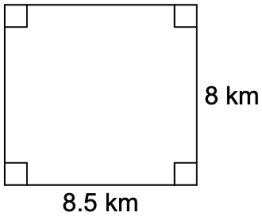
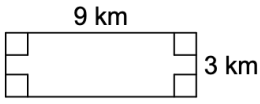
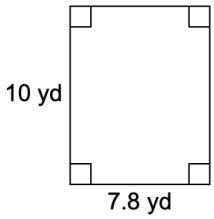
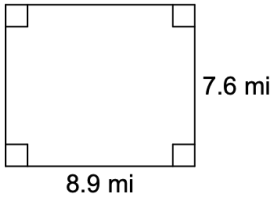
$A = (12)(8.6)$

$A = 103.2\ cm^2$

$A = \frac{1}{2}\ bh$

$A = \frac{1}{2}\ (11)(7.5)$

$A = 41.25\ yd^2$

1. 	2. 
3. 	4. 
5. 	6. 

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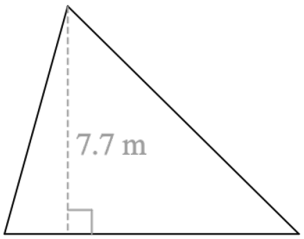

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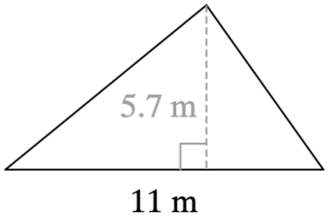

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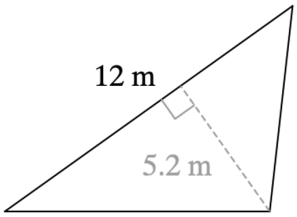

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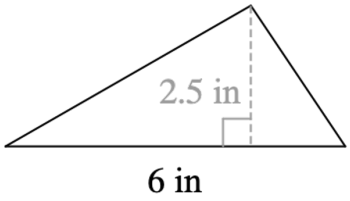

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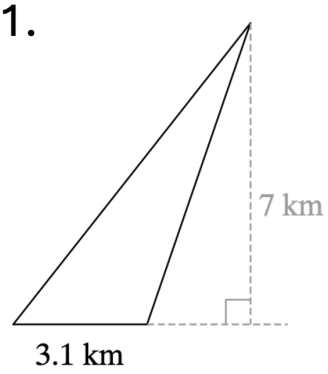

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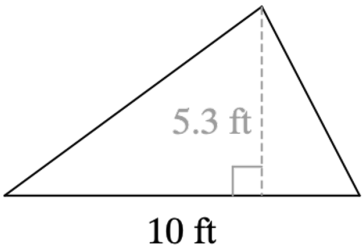

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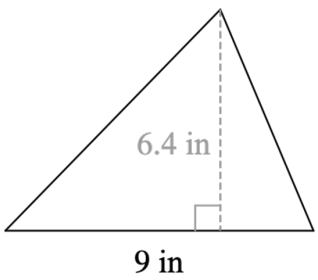

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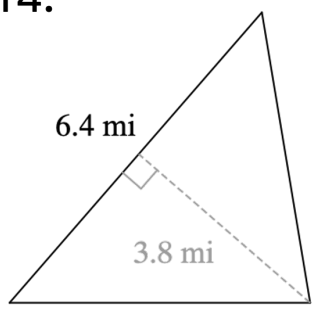


Name: _____

Coordinate Plane

Directions: Plot each set of points on the coordinate plane. State which quadrant it is in.

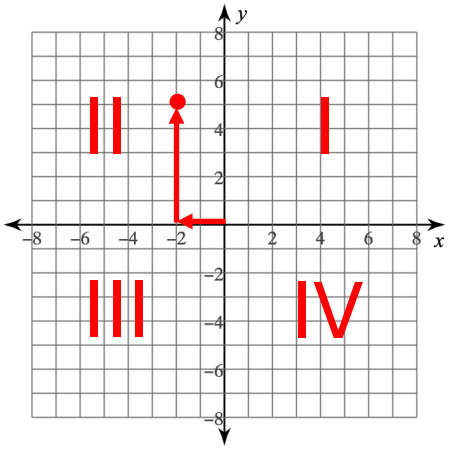
Example: (-2, 5)

* Starts at the origin (0,0)

* -2 is the x-coordinate. Move 2 spaces to the left of 0 on the x-axis.

* 5 is y-coordinate. From -2, move five spaces UP the y-axis.

- Place your point here.
- Identify the Quadrant. This is 2.



	Plot Point	Quadrant?
1)	(3, 7)	
2)	(-4, -10)	
3)	(-6, 1)	
4)	(0, 7)	
5)	(11, -5)	
6)	(-8, -8)	
7)	(7, 10)	
8)	(12, -1)	
9)	(-9, 4)	
10)	(3, -6)