6th Grade
Math Review Packet

- This packet is designed to help you retain the information you learned in 5th grade.
- It will be most helpful if you work on it gradually throughout the summer to keep up your skills.
- The completed packet (*with all work attached*) is to be turned in the **first day of school.**
    - In addition to a homework grade, students prepared on that first day of class will receive 2 homework passes.

Hope you all have a wonderful summer!

Mrs. Wellnitz

To divide a decimal by a whole number, first place a decimal point in the quotient directly above the decimal point in the dividend. Then divide the same way you divide whole numbers. Sometimes you must write leading zeros after the decimal point in the quotient.

$$9 \overline{)40.5}$$

$$37 \overline{)1.85}$$

Divide. Write leading zeros in the quotient if necessary.

5. $13 \overline{)79.599}$

6. $22 \overline{)12.342}$

7. $63 \overline{)0.693}$

8. $52 \overline{)10.452}$

Solve.

1. Pak Chuen bought a new snowboard for $210.88. He paid for it in 8 equal payments. How much was each payment?

2. A monthly lift pass at Sneak Peak costs $145.50 and is good for 30 days. If Pak Chuen used it every day for a month, what would be the cost per day?

To divide a decimal by a decimal, follow these steps to form a simplified problem.

1. Move the decimal point to make the divisor a whole number.

2. Move the decimal in the dividend the same number of places. You may need to write a zero in the dividend.

3. Place the decimal point in the quotient and divide. Remember to write leading zeros if necessary.

Step 1	Step 2	Step 3
$0.16\overline{)1.2}$	$16.\overline{)1.20}$	$16.\overline{)120.}$

Step 3:
$$16.\overline{)120.}$$
$$\begin{array}{r} 7.5 \\ 112 \\ \hline 80 \\ 80 \\ \hline \end{array}$$

Divide until there is no remainder. Place zeros where they are needed.

1. $0.4\overline{)3.5}$

2. $0.8\overline{)0.28}$

3. $1.5\overline{)0.6}$

4. $2.4\overline{)5.4}$

Solve.

1. A sailboat traveled 60.15 kilometers up a river in 7.5 hours. What was the average distance per hour?

2. A boat is cruising at a speed of 8.3 kilometers per hour. How long will it take to travel a distance of 8.715 kilometers?

To add mixed numbers, first find equivalent fractions with like denominators. Then add, first the fractions and then the whole numbers. Sometimes you must regroup a sum in order to write it in lowest terms.

$$1\frac{5}{6} = 1\frac{10}{12}$$
$$+2\frac{11}{12} = 2\frac{11}{12}$$
$$3\frac{21}{12} = 4\frac{9}{12} = 4\frac{3}{4}$$

Add. Write each sum in lowest terms.

1. $3\frac{3}{5}$
   $+2\frac{1}{10}$

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

3. $2\frac{2}{16}$
   $+1\frac{7}{8}$

4. $6\frac{2}{3}$
   $+4\frac{7}{12}$

9. $2\frac{2}{12}$
   $+2\frac{7}{18}$

10. $6\frac{5}{9}$
    $+4\frac{1}{2}$

11. $3\frac{7}{10}$
    $+5\frac{1}{4}$

12. $1\frac{3}{24}$
    $+2\frac{3}{16}$

Solve.

1. Bert skied trails that were $2\frac{1}{5}$ miles, $3\frac{3}{10}$ miles, and $5\frac{1}{2}$ miles long. How many miles did he ski in all?

2. Bert skied for $1\frac{3}{4}$ hours Friday night, $5\frac{1}{3}$ hours Saturday, and $3\frac{1}{6}$ hours Sunday afternoon. How many hours did he spend skiing that weekend?

To find a fraction of a whole number or a mixed number, first change the number to a fraction. If both numbers are mixed numbers, change both to fractions.

$$\frac{5}{6} \text{ of } 10 = \frac{5}{6} \times \frac{10}{1} = \frac{5 \times \overset{5}{\cancel{10}}}{\cancel{6} \times 1} = \frac{25}{3} = 5\frac{1}{3} \qquad \frac{2}{3} \text{ of } 2\frac{3}{4} = \frac{2}{3} \times \frac{11}{4} = \frac{\overset{1}{\cancel{2}} \times 11}{3 \times \cancel{4}} = \frac{11}{6} = 1\frac{5}{6}$$

Multiply. Use the shortcut if possible. Write each product in lowest terms.

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7. $\dfrac{4}{5} \times 60 =$

8. $\dfrac{4}{5} \times 5\dfrac{5}{8} =$

9. $7\dfrac{8}{9} \times 2\dfrac{2}{5} =$

10. $2\dfrac{2}{3} \times 7\dfrac{6}{7} =$

11. $\dfrac{4}{9} \times 12 =$

12. $4\dfrac{5}{9} \times 6\dfrac{3}{10} =$

Solve. Write each answer in lowest terms.

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1. Ms. Tran has $\dfrac{1}{3}$ of a tank of gas in her car. If the tank holds $14\dfrac{1}{3}$ gallons, about how much gas does she have?

2. The trip to work takes Ms. Tran $\dfrac{7}{12}$ of an hour. If she makes this trip 10 times a week, how much time does she spend commuting?

To divide mixed numbers, first change them to fractions. Then divide by multiplying by the reciprocal of the divisor.

$$3\frac{1}{2} \div 1\frac{3}{4} = \frac{7}{2} \div \frac{7}{4} = \frac{\cancel{7}}{\cancel{2}} \times \frac{\cancel{4}^{2}}{\cancel{7}_{1}} = 2 \qquad 1\frac{3}{5} \div 2\frac{2}{3} = \frac{8}{5} \div \frac{8}{3} = \frac{\cancel{8}^{1}}{5} \times \frac{3}{\cancel{8}_{1}} = \frac{3}{5}$$

Divide. Write each answer in lowest terms.

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

8. $5 \div 1\frac{7}{8} =$

9. $2\frac{4}{9} \div 2\frac{3}{4} =$

10. $3\frac{3}{8} \div 12 =$

11. $4\frac{1}{6} \div 1\frac{1}{4} =$

12. $6\frac{2}{5} \div 2\frac{4}{5} =$

Solve. Write each answer in lowest terms.

1. The Wing family has a tailor shop. Mrs. Wing spent $2\frac{3}{4}$ hours replacing broken zippers today. If it takes her $\frac{1}{4}$ hour to do one, how many zippers did she replace?

2. Mr. Wing has 36 yards of wool fabric. A sports jacket takes $1\frac{4}{5}$ yards to make. How many jackets could Mr. Wing make with the fabric?

A **one-step equation** contains one operation. To solve it, use the inverse operation on both sides of the equation.

$x + 2 = 9$	$y - 15 = 45$	$2x = 6$	$\frac{x}{4} = 2.5$
Subtract 2 from each side.	Add 15 to each side.	Divide each side by 2.	Multiply each side by 4.
$x + 2 = 9$	$y - 15 = 45$	$\frac{2x}{2} = \frac{6}{2}$	$\frac{x}{4} \cdot 4 = 2.5 \cdot 4$
$\frac{-2 \quad -2}{x = 7}$	$\frac{+15 \quad +15}{y = 60}$	$x = 3$	$y = 10$

Solve each equation.

1. $x + 15 = 31$

2. $y - 2 = 7$

3. $6m = 90$

7. $6.75 + b = 7.5$

8. $\frac{n}{12} = 10$

9. $r + 21 = 24$

Write an equation for each problem and solve.

1. The sum of a and 35 is 100. What is a?

2. The product of x and 4 is 100. What is x?

Lines, line segments and rays

Identify the figure

Using the correct symbol, write the name of this figure.

B

A

Line ☐
Line Segment ☐
Ray ☐

Name [＿＿＿＿＿＿]

Identify the figure

Using the correct symbol, write the name of this figure.

G   H

Line ☐
Line Segment ☐
Ray ☐

Name [＿＿＿＿＿＿]

Identify the figure

Using the correct symbol, write the name of this figure.

X

Y

Line ☐
Line Segment ☐
Ray ☐

Name [＿＿＿＿＿＿]

Identify the figure

Using the correct symbol, write the name of this figure.

F
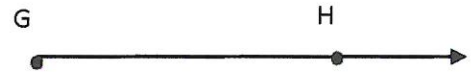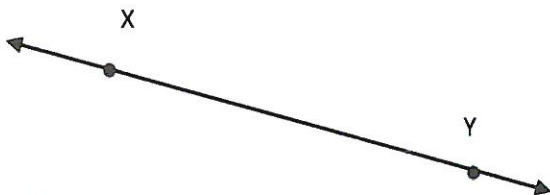
E
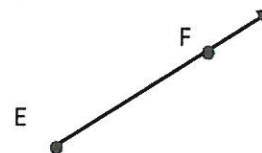
Line ☐
Line Segment ☐
Ray ☐

Name [＿＿＿＿＿＿]

Triangle Review

A triangle has one angle of 68° and two angles of 56°. What type of triangle is it?

Draw it!

A triangle has sides of lengths 6, 4 and 7 meters. What type of triangle is it?

Draw it!

A triangle has angles measuring 51°, 61° and 68°. What type of triangle is this?

Draw it!

A triangle has three sides measuring 10 feet in length. What type of triangle is this?

Draw it!

Parts of the circle

Look at the image of the circle. Then, write the appropriate term that corresponds to the information below.
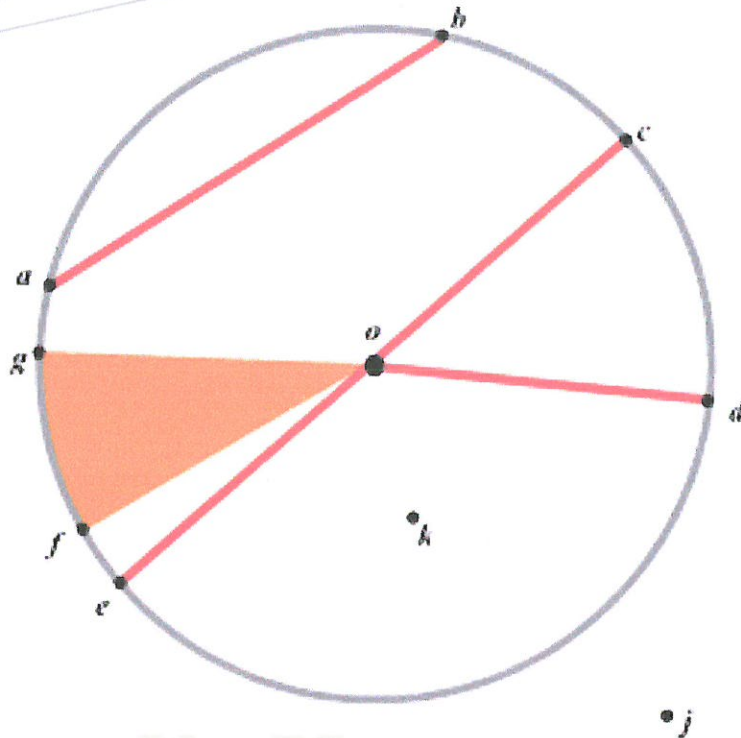
Write the correct symbol with these points to indicate what the group of points is.	What is this? Example "radius".
gb	
gof	
gf	
oe	
k	
ec	
od	
ab	

Calculate missing angles and line lengths

What is the measure of the missing angle?

?
114'
42'
95'
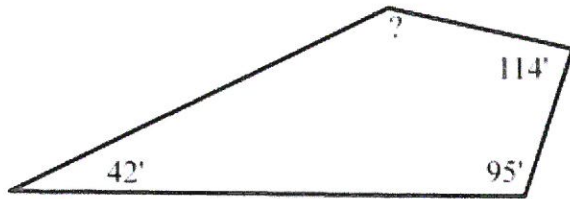
The perimeter of this figure is 20 cm

What is the missing length?

4.5cm
2cm
5.5cm

What is the measure of the missing angle?

57'
148'
?
78'
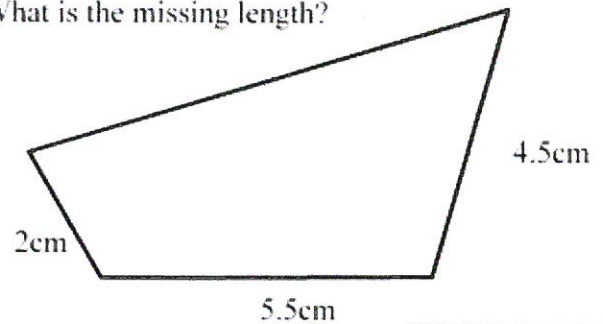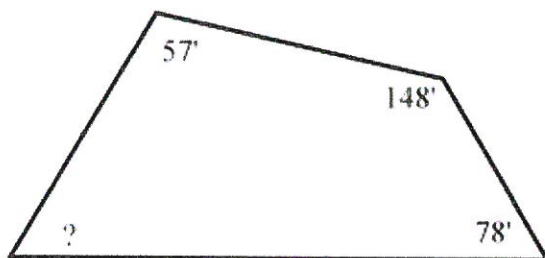
The perimeter of this figure is 20 cm

What are the values of the two missing lengts?

?
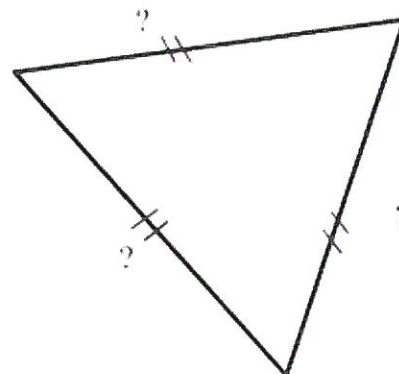4m
?
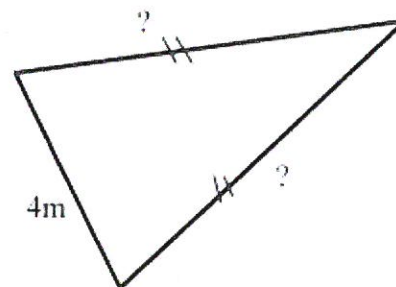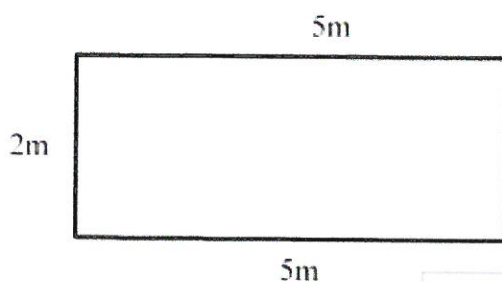
The perimeter of this figure is 18m

What are the values of the three missing lengts?

What is the measure of the missing length?
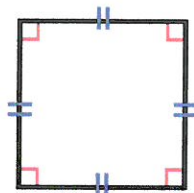
5m
2m
5m

?
?
?

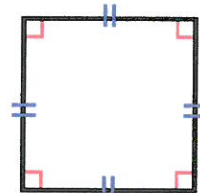## Identify the Type For Each Quadrilateral.
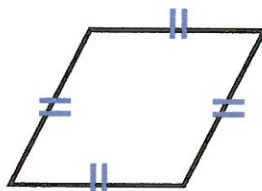
1)
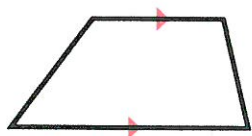
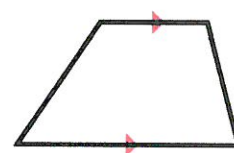Type: _____

2)

Type: _____

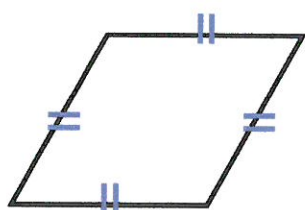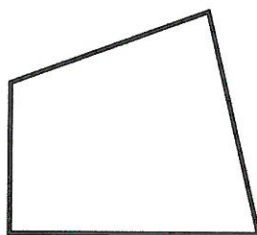3)

Type: _____

4)

Type: _____

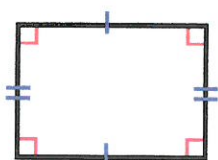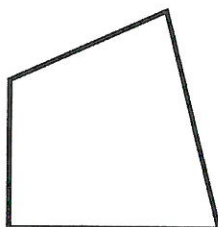5)

Type: _____

6)

Type: _____
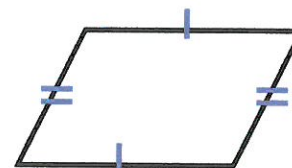
7)

Type: _____

8)

Type: _____

9)

Type: _____

10)

Type: _____

11)

Type: _____

12)

Type: _____

Math-Aids.Com

An ordered pair of integers, such as (2,3), names the location of a point on a coordinate plane.

The first integer names the location on the x-axis. The second integer names the location on the y-axis. The axes intersect at the origin (0,0) and divide the plane into four quadrants.

Name the ordered pair for each point.

1. A _____

2. B _____

3. C _____

4. D _____

5. E _____
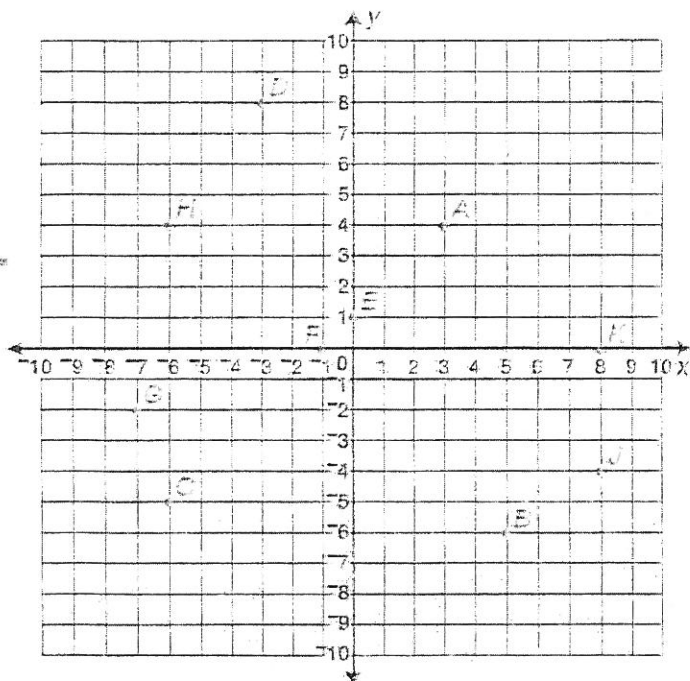
Name the point for each ordered pair on the coordinate plane below.

1. (6,7) _____

2. (3,⁻1) _____

3. (0,2) _____

4. (⁻5,5) _____

5. (⁻3,⁻2) _____

6. (⁻3,2) _____

2.6 GREATEST COMMON FACTOR (GCF)
LEAST COMMON MULTIPLE (LCM)

GCF/LCM

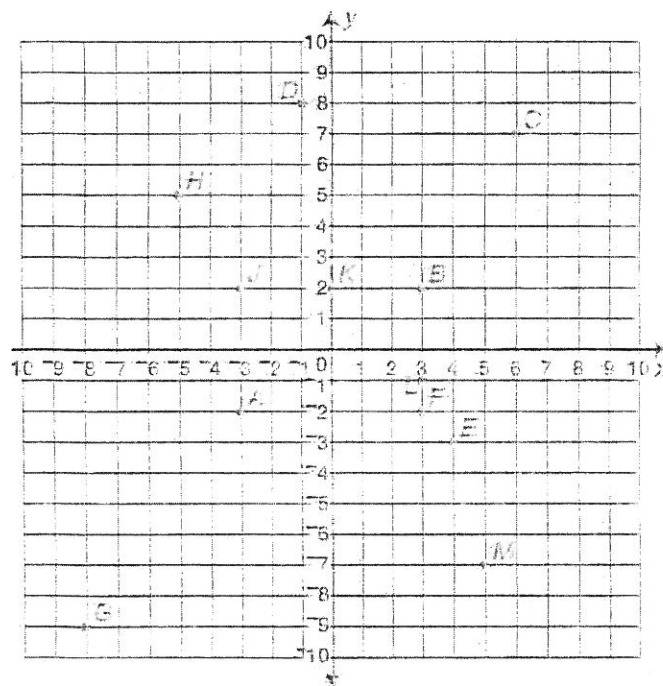| Terminology	Description	Procedure/Example

Greatest Common Factor (GCF)	the largest factor a given group of numbers has in common	Step 1:
		    List the factors of each number in the given group.
		
		Step 2:
		    Search for the greatest common factor.
		
		For example:
		    Factors of 30: 1, ②, 3, 5, 6, 10, 15, 30
		
		    Factors of 16: 1, ②, 4, 8, 16
		
		    Two is the greatest common factor.

Least Common Multiple (LCM)	the smallest positive integer a given group of numbers can each divide into without a remainder	Step 1:
		    List several multiples of each number in the given group.
		
		Step 2:
		    Search for the first non-zero multiple they have in common.
		
		For example:
		    Multiples of 6: 6, 12, 18, ㉔, 36, 42, 48
		
		    Multiples of 8: 8, 16, ㉔
		
		    Twenty-four is the least common multiple.

◉ GCF - If two numbers do not have GCF greater than 1 the pair is called relatively prime.

OUR TURN

Q:

1 What is the greatest common factor (GCF) of 24 and 30?

2 What is the least common multiple (LCM) of 24 and 30?

A:

1 List the factors of 24 and 30

    Factors of 24: 1, 2, 3, 4, ⑥, 8, 12, 24

    Factors of 30: 1, 2, 3, 5, ⑥, 10, 15, 30

    The GCF is 6

2 List several multiples of 24 and 30

    Multiples of 24: 0, 24, 48, 72, 96, ⑴⑵⓪, 144

    Multiples of 30: 0, 30, 60, 90, ⑴⑵⓪, 150

    The LCM is 120

◉ Remember: The LCM is a positive integer, therefore 0 is not the LCM.

YOUR TURN

Find the GCF of each of the following pairs of numbers.

1. 12 and 30

2. 18 and 50

3. 24 and 40

4. 13 and 52

5. 100 and 250

Find the LCM of each of the following pairs of numbers.

6. 12 and 30

7. 9 and 10

8. 8 and 24

9. 3 and 7

10. 4 and 6

11. What is the greatest common factor (GCF) of the numbers 26 and 39?

   A 1

   B 3

   C 13

   D 23

12. If the factors of every positive integer were listed respectively, what number would be on every list?

   F 0

   G 1

   H 2

   J 10

13. If a list was made of all the factors of 24 and another list of all the multiples of 24, what number would be on both lists?

   A 0

   B 1

   C 3

   D 24

14. What is the least common multiple (LCM) of 2, 6, 12, and 24?

   F 2

   G 18

   H 24

   J 36

15. If the multiples of all the positive integers were listed respectively, what number is a multiple of every integer?

   A 0

   B 1

   C 10

   D 100