

August 13, 2018

$(x,y) \rightarrow (-y,x)$

rotation 90° counterclockwise about the origin

Where are the points

R(4,5) R'(-5,4)  
 S(2,2) S'(-2,2)  
 L(5,0) L'(-6,5)

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### Even, Odd, or Neither

$f(x) = x^2 + 6$	$f(x) = x^3 - 8x$	$f(x) = x^4 + 3x^2$
$f(-x) = f(x)$ Even	$f(-x) = -f(x)$ Odd	$f(-x) \neq f(x)$ Neither
Graph is symmetric with respect to the y-axis	Graph has origin symmetry	Graph is not symmetric with respect to the y-axis and does not have origin symmetry

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Look at the exponents!

### Compare

$f(x) = 4x^2 - 7x^{40}$ ; Even Function

$g(x) = 5x^2 - 2x^1$ ; Odd Function

$h(x) = 7x^2 + 5x^1 + 3x^0$ ; Neither

even odd even

Even	Odd	Neither
Graph is symmetric with respect to the y-axis	Graph has origin symmetry (if we rotate half the graph about the origin, it fits perfectly over the other half)	Graph is not symmetric with respect to the y-axis and does not have origin symmetry

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Determine whether the following functions are even, odd, or neither.

1. $f(x) = 4x^3 - 3x^5$ <b>NEITHER</b>	2. $f(x) =  x  + 1$ <b>EVEN</b>	3. $f(x) = -x^2 - 4$ <b>EVEN</b>
4. $f(x) = \frac{1}{3}x^3$ <b>odd</b>	5. $f(x) = 7x^1$ <b>odd</b>	6. $f(x) = \sqrt{x+5}$ <b>NEITHER</b>

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7. $f(x) = 3x^2$ even	8. $f(x) = x^3 - 2x^0$ NEITHER	9. $f(x) = 3x^1 + 4x^0$ NEITHER
10. $f(x) = x^2 - 5x^0$ even	11. $f(x) = 10x^4 + 5x^3$ NEITHER	12. $f(x) = 2(x+1)^3$ NEITHER

odd even

NEITHER

$2(x^3 + 3x^2 + 3x + 1)$

$2x^3 + 6x^2 + 6x + 2$

$2x^3 + 4x^2 + 8x^1 + 2x^0$

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E

key: 1) N 2) E 3) E 4) O 5) O 6) N 7) E 8) N 9) N

10) E 11) N 12) N

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Geometry Unit 1 Study Guide  
Show all work

1. (G.CO.5) Which clockwise rotation about point P maps C to B?  
 $90^\circ$

2. (G.CO.2) Which describes how  $\triangle ABC$  could be rotated to form its image  $\triangle A'B'C'$ ?  
 $90^\circ$  counterclockwise

3. (G.CO.4) When the point  $(-3, 2)$  is reflected across the  $y$ -axis, what is the resulting image?  
 $(3, 2)$

4. (G.CO.4) What is the image of  $(-3, 2)$  when it is translated by  $(x-1, y-4)$  and then reflected about the  $y$ -axis?  
 $(4, 2)$   $(-3-1, 2-4) = (-4, -2)$

5. (G.CO.4) Trapezoid  $P'Q'R'S'$  is the image of trapezoid  $PQRS$ . Explain the transformation that has taken place.  
 $R_y$  axis

6. (G.CO.5) Which of the following is not a rotation of the figure at the right?

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7. (G.CO.5) What type of transformation is shown in the diagram below?  
 $R_{y=x}$

8. (G.CO.4) Which of the following capital letters does not have a line of symmetry?  
A Z

9. (G.CO.4) Given the translation  $(x, y) \rightarrow (x, y+4)$ . What is the preimage of  $(3, 5)$ ?  
 $x=3$   $y-4=5$   
 $y=-1$

10. (G.CO.2) The translation "5 units to the left and 3 units down" in coordinate notation would be?  
 $(x-5, y-3)$

11. (G.CO.3) Use the figure at right to determine which segment represents a  $90^\circ$  counterclockwise rotation of  $\overline{AB}$  about P.  
GH

12. (G.CO.4) If  $B(-2, -1)$  is reflected about the  $x$ -axis, then the coordinates of  $B'$  are?  
 $(-2, 1)$

13. (G.CO.4) Give an example of 2 figures that are not an isometry?  
O O

4. (G.CO.2) What is the line of reflection for a transformation that maps  $(4, -3)$  to  $(-3, 4)$ ?  
 $y=x$

5. (G.CO.3) Which description of a rotation would map the figure below onto itself?  
 $180^\circ, 360^\circ$

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16. (G.CO.5) The coordinates of  $\triangle LMN$  are  $L(-6, 8)$ ,  $M(-4, 2)$ ,  $N(-10, 4)$  and is translated  $(x, y) \rightarrow (x-6, y+4)$ . What are the coordinates of the new figure?  
 $L'(-12, 12)$   $M'(-10, 6)$   $N'(-16, 8)$

17. (G.CO.5) Reflect  $\triangle LMN$  using the rule  $(x, y) \rightarrow (x, -y)$ .  
 $m(-4, 2) \rightarrow m'(-4, -2)$   
 $N(-9, 3) \rightarrow N'(-9, -3)$   
 $L(-6, 8) \rightarrow L'(-6, -8)$   
What line did you reflect  $\triangle ABC$  across?  
 $x$ -axis

18. (G.CO.5) In the coordinate plane below, rotate  $\triangle ABC$   $180^\circ$  degrees about the origin. What are the coordinates of the image?  $(x, y) \rightarrow (-x, -y)$   
 $A' 5, -2 \leftarrow A(-5, 2)$   
 $B' -4, -2 \leftarrow B(-4, 2)$   
 $C' 2, 0 \leftarrow C(-2, 0)$

19. Write an example of an even, odd, and neither function.  
a. NEITHER:  $2x^4 + |x|$   
b. EVEN:  $|x|^4$   
c. ODD:  $|x|^3$

20. Determine if the given functions are even, odd, or neither.  
a.  $f(x) = 4x^2 + 6x^3$  even  
b.  $f(x) = 9x^5$  odd

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If a point is translated by the rule  $(x - 4, y + 1)$  and the image is  $(0, -2)$ , what is the location of the pre-image?

$$\begin{array}{r} x - 4 = 0 \\ +4 \quad +4 \\ \hline x = 4 \end{array} \quad \begin{array}{r} y + 1 = -2 \\ -1 \quad -1 \\ \hline y = -3 \end{array}$$

$(4, -3)$

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21. (G.CO.5) The  $\triangle ABC$  is translated 2 units down, reflected over the  $x$ -axis, rotated  $180^\circ$  degrees.  
Label the reflection as  $\triangle B'C'$ .  
Label the rotation as  $\triangle A''B''C''$ .  
 $(x, y) \rightarrow (-x, -y)$   
 $A'(-4, -1) A''(4, 1)$   
 $B'(-1, -1) B''(1, 1)$   
 $C'(-1, -4) C''(1, 4)$

22. (G.CO.5) List the sequence of transformations necessary to map  $\triangle ABC$  to  $\triangle A''B''C''$ .  
Transformation 1:  $R_x$  axis  
Transformation 2:  $R_{90^\circ}$   
Transformation 3:  $T_{2, 9}$

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Unit 1 Test!

You may skip one problem from each page...

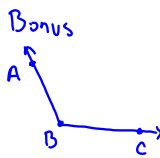
please write the word 'skip' on the problem,

otherwise I will have assumed you left the problem unanswered and count it wrong.

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quiz review

Bonus



Classification (Circle One) **Obtuse**

Angle Name 1  $\angle ABC$   
 2  $\angle CBA$   
 3  $\angle B$

Vertex

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-Label the angle using the geometric vocabulary (ray) and vertex

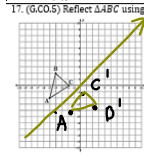
Is this a right, acute or obtuse angle? Why? *The measure is less than 90°.*

-If you are told this is  $\angle KLM$ , place K, L, and M properly on the diagram.  
*L has to be the vertex!*

Highly missed problems from the unit test...

7. (G.CO.5) What type of transformation is shown in the diagram below?  
 A. translation  B. translation  C. reflection  D. dilation

11. (G.CO.5) Reflect  $\triangle ABC$  using the rule  $(x, y) \rightarrow (y, x)$ . Make sure that you draw the line of reflection.



$X, Y \rightarrow Y, X$   
 $A(-5, -2) \rightarrow A'(-2, -5)$   
 $B(-4, 2) \rightarrow B'(2, -4)$   
 $C(-2, 0) \rightarrow C'(0, -2)$

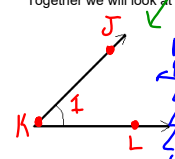
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Unit 2!

In your textbook, using pages 18-20 define the words:  
 angle  
 vertex  
 sides  
 degrees  
 angle bisector

In your textbook, page 19 copy the 'Classifying Angles' in purple

Together we will look at naming angles, draw the below angle



**NOT ANGLE NAMES**  
 $\angle K LJ$   
 $\angle J L K$   
 $\angle K J L$   
 $\angle L K J$

**NAMES FOR ANGLE**  
 $\angle J K L$   
 $\angle L K J$   
 $\angle J$   
 $\angle K$   
 $\angle L$

*WITH 3 LETTER THE VERTEX LETTER MUST BE IN THE MIDDLE.  
 WITH 1 LETTER, IT MUST BE THE VERTEX LETTER  
 WITH 2 NUMBER.*

Aug 15-7:50 AM

p20 copy the 'angle addition postulate'

Old: Segment addition postulate  
 $\frac{A}{a} + \frac{B}{b} = \frac{C}{c}$   
 New: Angle addition postulate  
 $\angle PQR + \angle RST = \angle PQT$

Let's check what we are learning:  
 p22 #4-7 & p23 #17-18  
 4)  $\angle XWZ$   
 5)  $\angle YVW$   
 6)  $\angle ZWX$   
 7)  $\angle WZY$   
 12) Acute

4.1 Angles Formed by Intersecting Lines

Essential Question: Can you find the measures of angles formed by intersecting lines?

Explore 1: **Exploring Angle Pairs Formed by Intersecting Lines**

Using a straightedge, draw a pair of intersecting lines like the open scissors shown at 1, 2, 3, and 4.

Use a protractor to find each measure.

Angle	Measure
$m\angle 1$	45
$m\angle 2$	45
$m\angle 3$	45
$m\angle 4$	45
$m\angle 1 + m\angle 2$	90
$m\angle 2 + m\angle 3$	90
$m\angle 3 + m\angle 4$	90
$m\angle 4 + m\angle 1$	90

*Vertical angles! Vertical angles are equal!*  
*Linear pairs are equal to 180°*

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August 16, 2018

p23 #19 use your compass to measure  $\angle A$  and  $\angle B$

$m\angle A = 40^\circ$  or  $45^\circ$   
 $m\angle B = 30^\circ$

Classify & name the following angle

$\angle PQR$   
 $\angle RQS$   
 $\angle Q$

*Obtuse*

Find your new seat too!

Aug 15-11:40 AM

You just learned 'vertical angles' & 'linear pairs'!

p 146 copy the vertical angle theorem


p 148 copy the definition of:  
 complementary angles  
 supplementary angles

Let's practice our learning p 150 #1

**Evaluate: Work and Practice**

Use this diagram and information for Exercises 1-4.

Given:  $m\angle AFB = m\angle EFD = 50^\circ$   
 Points B, F, D and points E, F, C are collinear.



1. State whether each pair of angles is a pair of vertical angles, a linear pair of angles, or neither.  
 A.  $\angle BFC$  and  $\angle DFE = VA$   
 B.  $\angle BFA$  and  $\angle DFE = \text{NEITHER}$   
 C.  $\angle BFC$  and  $\angle CED$   
 D.  $\angle AFE$  and  $\angle AFC$   
 E.  $\angle BFE$  and  $\angle CFD$   
 F.  $\angle AFE$  and  $\angle BFC = \text{NEITHER}$

2. Find  $m\angle AFE$ .  
 3. Find  $m\angle DFC$ .  
 4. Find  $m\angle BFC$ .

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Draw a vertical angle  
 Draw a linear pair  
 Draw a straight angle  
 Draw a right angle

Draw the following obtuse angle  $\angle$  IDK

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p 148 Define complementary angles  
 complementary angles

Complement ary angles  
 $40^\circ + 50^\circ = 90^\circ$

C.A.  
 $30^\circ + 60^\circ = 90^\circ$

Supplementary =  $180^\circ$   
 draw a pic for each definition

Supplementary angle  
 $120^\circ + 60^\circ = 180^\circ$

S.A.  
 $89^\circ + 91^\circ = 180^\circ$

p150 #6, 7, 8, 9 - try, then we will check!

Determine whether each statement is true or false. If false, explain why.

- If an angle is acute, then the measure of its complement must be greater than the measure of its supplement. **F**
- A pair of vertical angles may also form a linear pair. **F**
- If two angles are supplementary and congruent, the measure of each angle is  $90^\circ$ . **T**
- If a ray divides an angle into two complementary angles, then the original angle is a right angle. **T**

Aug 15-8:13 AM

Define in your textbook p 39-41

conjecture  
 inductive reas  
 deductive reas  
 theorem  
 counterexampl

Properties of Equality	
Addition Property of Equality	If $a = b$ , then $a + c = b + c$ .
Subtraction Property of Equality	If $a = b$ , then $a - c = b - c$ .
Multiplication Property of Equality	If $a = b$ , then $ac = bc$ .
Division Property of Equality	If $a = b$ and $c \neq 0$ , then $\frac{a}{c} = \frac{b}{c}$ .
Reflexive Property of Equality	$a = a$
Symmetric Property of Equality	If $a = b$ , then $b = a$ .
Transitive Property of Equality	If $a = b$ and $b = c$ , then $a = c$ .
Substitution Property of Equality	If $a = b$ , then $b$ can be substituted for $a$ in any expression.

p41 #6 copy and we will fill in together

6. Identify the Property of Equality that is used in each statement.

If $x = 2$ , then $2x = 4$ .	Multiplication POE
$5 = 3a$ ; therefore, $3a = 5$ .	Symmetric POE
If $T = 4$ , then $5T + 7$ equals 27.	Substitution POE
If $9 = 4x$ and $4x = m$ , then $9 = m$ .	Transitive POE

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p41 copy linear pair theorem

p 46 21-26

Use the figure for Exercises 21 and 22.

- Name three collinear points. **QRS**
- Name two linear pairs. **LPRO; LGRT**

Explain the error in each statement.

- Two planes can intersect in a single point. **line**
- Three points are not collinear. **can multiple**
- A line is contained in a plane. **o.c**
- If  $x^2 = 25$ , then  $x = 5$ . **-5**

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Classify each angle as acute, obtuse, right, or straight.

- 
- 
- 
- 
- 
- 

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Name each angle in four ways.

- 
- 
- 
- 

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Use the angle addition postulate to find the missing measurements.

11)  $m\angle HUI = 152^\circ$  and  $m\angle HIF = 60^\circ$ .  
Find  $m\angle FIJ$ .

12)  $m\angle QRS = 135^\circ$  and  $m\angle QRH = 74^\circ$ .  
Find  $m\angle HRS$ .

13) Find  $m\angle CDK$  if  $m\angle KDE = 160^\circ$  and  $m\angle CDE = 180^\circ$ .

14)  $m\angle JKL = 107^\circ$  and  $m\angle MKL = 85^\circ$ .  
Find  $m\angle JKM$ .

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15)  $m\angle FGZ = 52^\circ$  and  $m\angle ZGH = 94^\circ$ .  
Find  $m\angle FGH$ .

16) Find  $m\angle JIH$  if  $m\angle JIG = 70^\circ$  and  $m\angle GIH = 52^\circ$ .

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Name the relationship: complementary, linear pair, vertical, or adjacent.

17)

18)

19)

20)

21)

22)

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Using vertical pairs, find the measure of angle b.

23)

24)

25)

26)

27)

28)

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Using complementary angles, find the value of x.

29)

30)

31)

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Using linear pairs, find the measure of angle b.

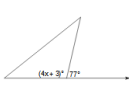
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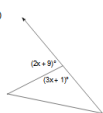
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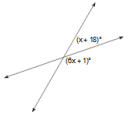
34)

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Find the value of  $x$ .

35) 

36) 

37) 

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