

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

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

NEITHER

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

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

$(2x^3 + 6x^2 + 6x + 2)$

$(2x^3 + 6x^2 + 6x + 2)$

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

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

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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  $x$ -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?  
A. B. C. D.

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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 B. C C. H D. I

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

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

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?

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

15. (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 new figure? Graph and label the image.  
 $A'$  \_\_\_\_\_  
 $B'$  \_\_\_\_\_  
 $C'$  \_\_\_\_\_

19. Write an example of an even, odd, and neither function.  
a. NEITHER: \_\_\_\_\_  
b. EVEN: \_\_\_\_\_  
c. ODD: \_\_\_\_\_

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

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21. (G.CO.5) The  $\triangle ABC$  is in the 2nd quadrant, reflect over the  $x$ -axis, rotated  $180^\circ$  degrees.  
Label the reflection as  $\triangle A'B'C'$   
Label the rotation as  $\triangle A''B''C''$

22. (G.CO.5) List the sequence of transformations necessary to map  $\triangle ABC$  to  $\triangle A''B''C''$ .  
Transformation 1: \_\_\_\_\_  
Transformation 2: \_\_\_\_\_  
Transformation 3: \_\_\_\_\_

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Unit 1 Test!

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

1)

2)

3)


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
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
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
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Name each angle in four ways.

7) 

8) 

9) 

10) 

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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  $m\angle FIU$ .

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) 

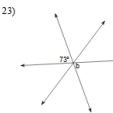
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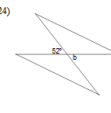
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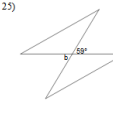
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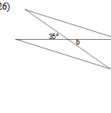
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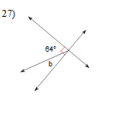
Using vertical pairs, find the measure of angle.

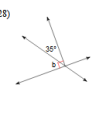
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24) 

25) 

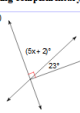
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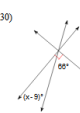
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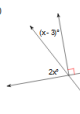
28) 

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Using complementary angles, find the value of x.


29) 

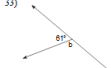
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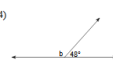
31) 

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Using linear pairs, find the measure of angle b.

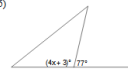
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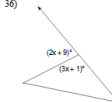
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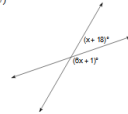
34) 

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Find the value of x.

35) 

36) 

37) 

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