

August 13, 2018

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

rotation 90° counterclockwise about the origin

Where are the points

R(1,5) R'(-5,1)
 S(2,2) S'(-2,2)
 T(5,0) T'(-0,5)

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Even, Odd, or Neither

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

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Compare

$f(x) = 4x^2 - 7x^0$; **Even Function**

$g(x) = 5x^2 - 2x^0$; **Odd Function**

$h(x) = 7x^2 + 5x^0 + 3x^0$; **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. $f(x) = 4x^3 - 3x^0$ Neither | 2. $f(x) = x + 1$ even | 3. $f(x) = -x^2 - 4x^0$ even |
| 4. $f(x) = \frac{1}{3}x^3$ odd | 5. $f(x) = 7x^3$ odd | 6. $f(x) = \sqrt{x+5}$ Neither |

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

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key: 1) N 2) N 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° CW

2. (G.CO.2) Which describes how $\triangle ABC$ could be rotated to form its image $\triangle A'B'C'$?
90° CCW
CW = 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.
 $R_{y\text{-axis}}$

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

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

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

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

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?
same size
 $\square \square$

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?
 $R_{x\text{-axis}}$

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

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) $T_{(4, 4)} \circ R_{90^\circ}$ $\triangle ABC$ is in the 2nd quadrant, reflects over the x-axis, rotated 180 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)


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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) 

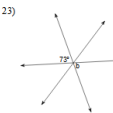
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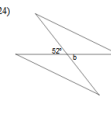
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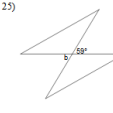
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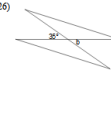
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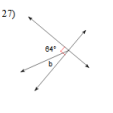
Using vertical pairs, find the measure of angle.

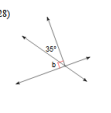
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24) 

25) 

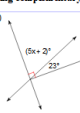
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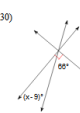
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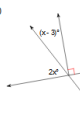
28) 

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Using complementary angles, find the value of x.


29) 

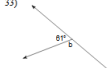
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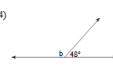
31) 

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Using linear pairs, find the measure of angle b.

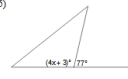
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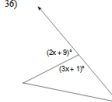
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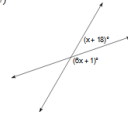
34) 

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Find the value of x.

35) 

36) 

37) 

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