

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

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

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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

$2(x+1)^3$
 $2(x+1)(x+1)(x+1)$
 $(2x+2)(x+1)(x+1)$
 $(2x^2 + 2x + 2x + 2)(x+1)$
 $(2x^2 + 4x + 2)(x+1)$
 $2x^3 + 2x^2 + 4x^2 + 4x + 2x + 2$
 $2x^3 + 4x^2 + 8x + 2$

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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 Name _____
Show all work

1. (G.CO.5) Which clockwise rotation about point P maps C to B?
 90°

2. (G.CO.2) Which describes how $\triangle ABC$ could be rotated to form its image $\triangle A'B'C'$?
 90° 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 $(3, 5)$?
 $x=3$ $y-4=5$
 $y=-1$

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.
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?

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° 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. $f(x) = 4x^2 + 6x^4$ 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?
 $x - 4 = 0$ $y + 1 = -2$
 $+4$ $+4$
 $x = 4$ $y = -3$
 $(4, -3)$

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21. (G.CO.5) The vertices of $\triangle ABC$ are $A(1, 1)$, $B(3, 1)$, and $C(3, 4)$. Reflect $\triangle ABC$ across the x -axis, then reflect the resulting figure across the y -axis. Label the reflection as $\triangle A''B''C''$. Label the rotation as R .
 $(x, y) \rightarrow (-x, -y)$
 $A'(-1, -1)$ $A''(1, 1)$
 $B'(-3, -1)$ $B''(3, 1)$
 $C'(-3, -4)$ $C''(3, 4)$

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°
Transformation 3: $T_{2, 9}$

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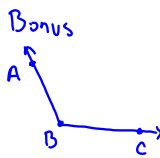
Unit 1 Test!

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



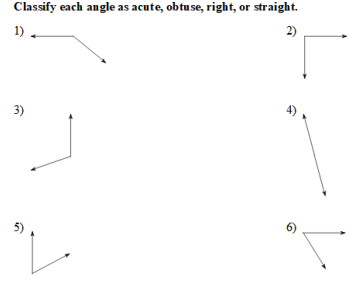
Classification (Circle One) **Obtuse**

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

Vertex

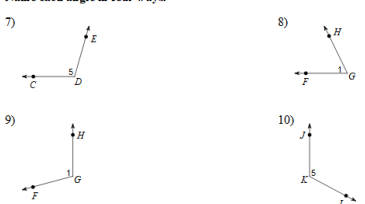
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Classify each angle as acute, obtuse, right, or straight.



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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) $m\angle HJ = 152^\circ$ and $m\angle HIF = 60^\circ$.
Find $m\angle FL$.




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 $m\angle FGH$.

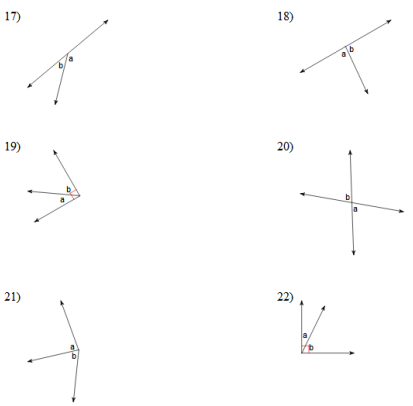


16) Find $m\angle JIH$ if $m\angle JIG = 70^\circ$ and $m\angle GIH = 52^\circ$.



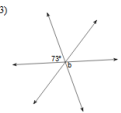
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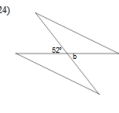
Name the relationship: complementary, linear pair, vertical, or adjacent.

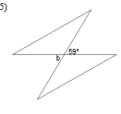


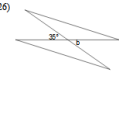
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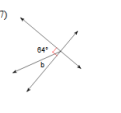
Using vertical pairs, find the measure of angle b.

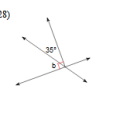
23) 

24) 

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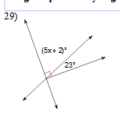
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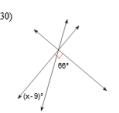
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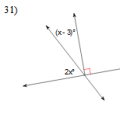
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Using complementary angles, find the value of x.

29) 

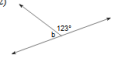
30) 


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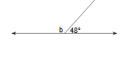
31) 

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Using linear pairs, find the measure of angle b.


32) 

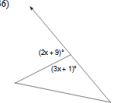
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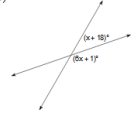
34) 

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Find the value of x.

35) 

36) 

37) 

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