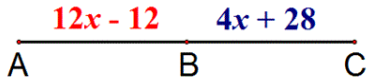
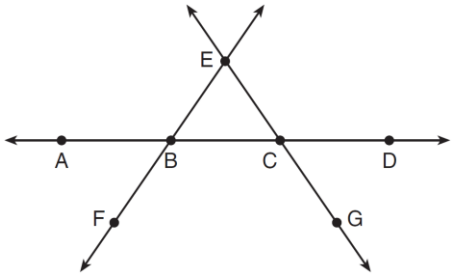
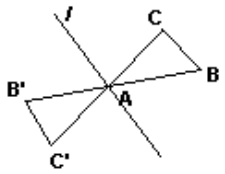
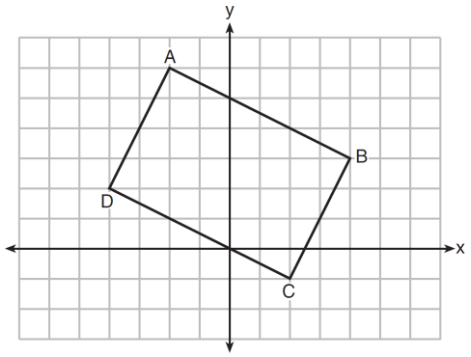
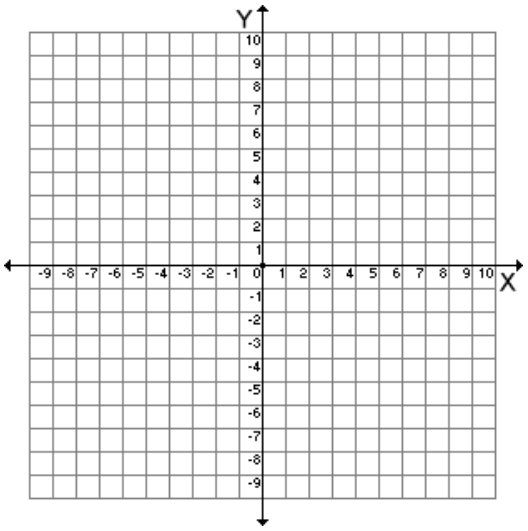
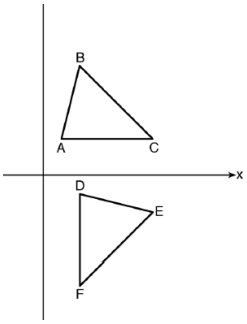
Name _____ **DUE DATE:** _____

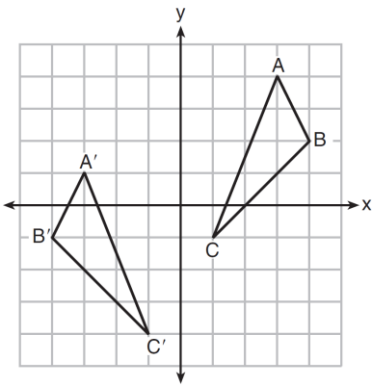
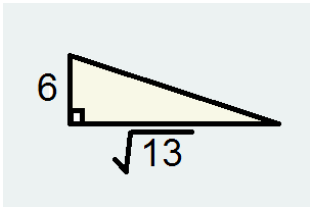
Geometry Regents Review #2

Directions: ***Choose the best answer. Answer ALL questions.*** **Show ALL work in column 2. If there is no mathematical work to be shown, write an explanation or definition to support your answer! This counts as a 20 point quiz grade!!!**

1. *B* is the midpoint of *AC*. Find *AB*, *BC* and *AC*.  The value AB is 1) 5 2) 10.25 3) 48 4) 96	**Show Work!**
2. Which geometric figure has 120° rotational symmetry? 1) equilateral triangle 3) regular hexagon 2) square 4) rhombus	**Explain your choice!**
3. Which is equivalent to $r_{y=0} \circ r_{x=0}$? 1) $T_{0,2}$ 2) $T_{2,0}$ 3) $R_{o,90^o}$ 4) $R_{o,180^o}$	**Explain your choice!**
4. In the diagram below, $\overleftrightarrow{FE}$ bisects $\overline{AC}$ at *B*, and $\overleftrightarrow{GE}$ bisects $\overline{BD}$ at *C*.  Which statement is always true? 1) $\overline{AB} \cong \overline{DC}$ 2) $\overline{FB} \cong \overline{EB}$ 3) $\overleftrightarrow{BD}$ bisects $\overline{GE}$ at *C*. 4) $\overleftrightarrow{AC}$ bisects $\overline{FE}$ at *B*.	**Explain your choice!**
5. The endpoints of one side of a regular pentagon are $(-1, 4)$ and $(2, 3)$. What is the perimeter of the pentagon? 1) $\sqrt{10}$ 2) $5\sqrt{10}$ 3) $5\sqrt{2}$ 4) $25\sqrt{2}$	

6. Which transformation is a direct isometry? 1) D_2 2) $r_{y\text{-axis}}$ 3) $T_{-2,5}$ 4) $r_{y=x}$	**Explain your choice!**
7. Which composition is an opposite isometry? 1) $T_{-2,0} \circ T_{3,5}$ 2) $r_{x-axis} \circ r_{y-axis}$ 3) $D_{-2} \circ R_{90^o}$ 4) $r_{y=x} \circ R_{o,270^o}$	**Explain your choice!**
8. If the transformation T(x, y) maps the point A(1, -3) onto point A'(-4, 8), what is the value of y? 1. 5 2. 11 3. -5 4. -11	**Show Work!**
9. The transformation of ΔABC to ΔAB'C' is shown in the accompanying diagram.  This transformation is an example of a 1. line reflection in line l 2. rotation about point A 3. dilation 4. translation	**Explain your choice!**
10.Quadrilateral *ABCD* is graphed on the set of axes below.  When *ABCD* is rotated 90° in a counterclockwise direction about the origin, its image is quadrilateral *A'B'C'D'*. Is distance preserved under this rotation, and which coordinates are correct for the given vertex? 1) no and $C'(1,2)$ 2) no and $D'(2,4)$ 3) yes and $A'(6,2)$ 4) yes and $B'(-3,4)$	**Explain your choice!!!**

11. Write the point-slope form of the equation of the line which is perpendicular to $3x + y = 9$ and passes through (-4,5). 1) $y + 5 = -3(x + 4)$ 2) $y + 5 = \frac{1}{3}(x - 4)$ 3) $y - 5 = -3(x - 4)$ 4) $y - 5 = \frac{1}{3}(x + 4)$	**Show Work!**
12. If the coordinates of A are (2, -3), what are the coordinates of A', the image of A after $R_{o,90°} \circ r_{y\text{-axis}}(A)$? 1. (-2, -3) 2. (-3, 2) 3. (-3, -2) 4. (3, -2)	**Show Work!** 
13. Triangle ABC is rotated 270^0 to map onto triangle DEF. Which statement is true? (1) $\overline{BC} \cong \overline{DE}$ (2) $\overline{AB} \cong \overline{DF}$ (3) $\angle C \cong \angle E$ (4) $\angle A \cong \angle D$ 	**Explain your choice.**
14. The lines 3y + 1 = 6x + 4 and 2y + 1 = x – 9 are [1] parallel [2] perpendicular [3] the same line [4] neither parallel nor perpendicular	**Show Work!**
15. The x-axis is *not* the line of reflection for which of the following pairs of points? [A] $R'(1, 5) \rightarrow R'(1, -5)$ [B] $R'(-2, -4) \rightarrow R'(-2, 4)$ [C] $R'(-9, 4) \rightarrow R'(9, -4)$ [D] $R'(3, -2) \rightarrow R'(3, 2)$	**Explain your choice.**

16. As graphed on the set of axes below, $\triangle A'B'C'$ is the image of $\triangle ABC$ after a sequence of transformations.  Is $\triangle A'B'C'$ congruent to $\triangle ABC$? **Use the properties of rigid motion to explain your answer.**	Is $\triangle A'B'C'$ congruent to $\triangle ABC$? _____ **Use the properties of rigid motion to explain your answer.**
17. If a regular hexagon is rotated clockwise around the center point, what is the minimum number of degrees it must be rotated to map onto itself?	**Show Work!**
18. Find the perimeter of the triangle in simplest radical form.  	**Show Work!**
19. Sam leaves school to go home. He walks 6 blocks North and then 8 blocks west. How far is Sam from the school?	**Show Work!**
20. The endpoints of $\overline{AB}$ are $A(3,-4)$ and $B(7,2)$. Determine and state the length of $\overline{AB}$ in **simplest radical form.**	**Show Work!**