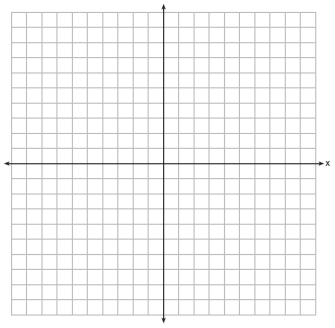
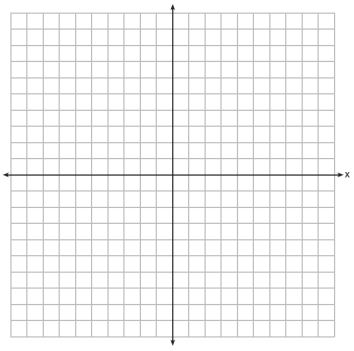
Name _____ **Date Due:** _____

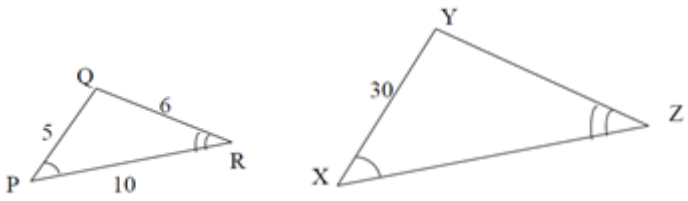
Geometry Regents Review #5

Directions: ***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 quiz grade!!! (20 pts.)

	Explain/Show work
1. The equation of line k is $y =$ $y = \frac{1}{3}x - 2$. The equation of line m is $-2x + 6y = 18$. Lines k and m are 1. parallel 2. perpendicular 3 .the same line 4. neither parallel nor perpendicular	***Show work***
2. Find the equation of the perpendicular bisector of the line segment whose endpoint are (-5, 5) and (8, 7).	***Show work..***
3. What are the coordinates of A', the image of point $A(-3, 4)$, after a rotation of 180° about the origin? 1. (4, –3) 2. (–4, –3) 3. (3, 4) 4. (3, –4)	***Explain*** 
4. Given the points A(-3, -4) and B(5, 0), find the coordinates of the point P on directed line segment $\overline{AB}$ that partitions $\overline{AB}$ in the ratio 3:1.	***Show work.*** 
5. In ΔABC, $m\angle A = 60$, $m\angle B = 80$, and $m\angle C = 40$. Which inequality is true? 1. $AB > BC$ 2. $AC > BC$ 3. $AC < BA$ 4. $BC < BA$	***Explain/show work***

6. ΔPQR is similar to ΔXYZ . What is the perimeter of ΔXYZ ?



A) 21 cm B) 63 cm C) 105 cm D) 126 cm

Show work

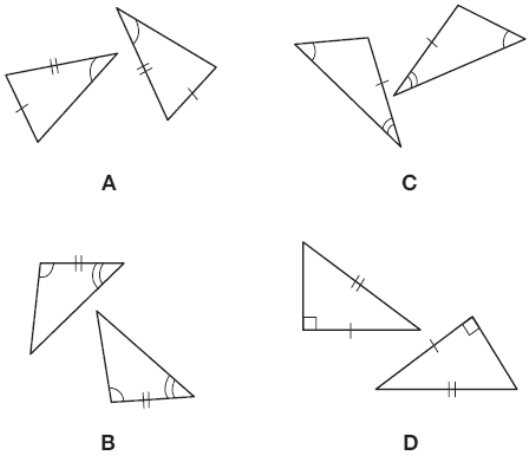
7. In the diagram of $\overline{WXYZ}$ below, $\overline{WY} \cong \overline{XZ}$.

Which reasons can be used to prove $\overline{WX} \cong \overline{YZ}$?

1. reflexive property and addition postulate
2. reflexive property and subtraction postulate
3. transitive property and addition postulate
4. transitive property and subtraction postulate

Statements	Reasons

8. In the diagram below, four pairs of triangles are shown. Congruent corresponding parts are labeled in each pair. **Using only the information given in the diagrams, which pair of triangles *cannot* be proven congruent?**



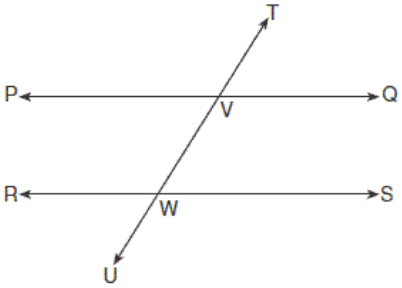
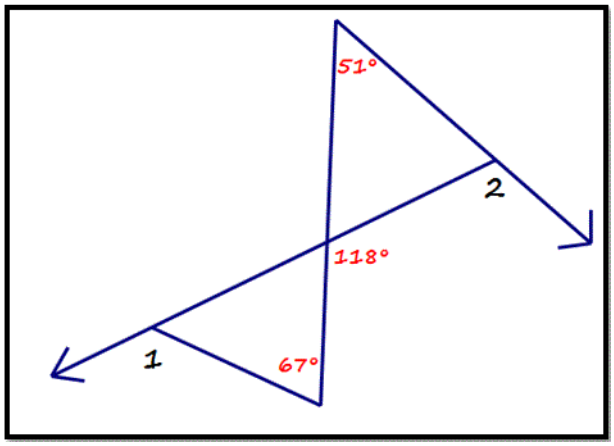
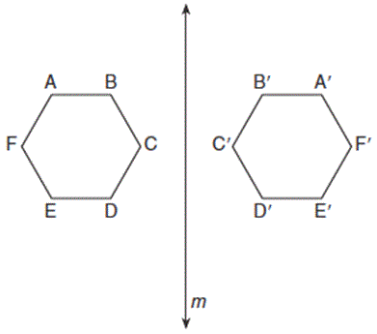
1. A 2. B 3. C 4. D

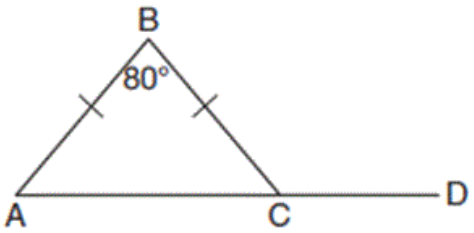
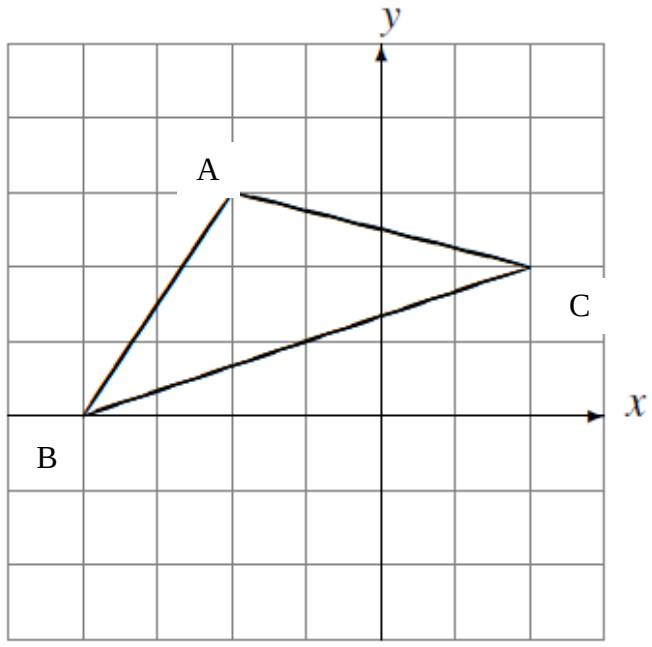
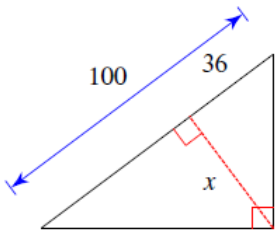
State the congruence theorem used to eliminate the other choices.

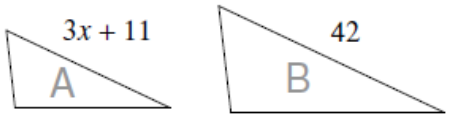
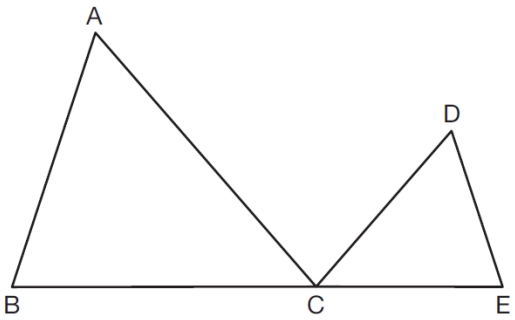
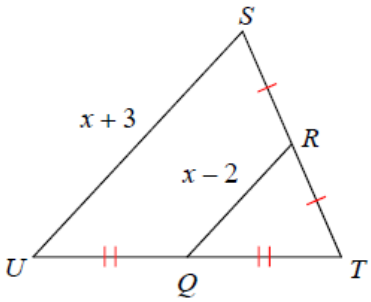
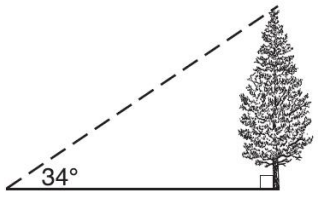
9. The midpoint of $\overline{AB}$ is $M(4,2)$. If the coordinates of A are $(6,-4)$, what are the coordinates of B?

1. $(1,-3)$ 2. $(2,8)$ 3. $(5,-1)$ 4. $(14,0)$

Explain/Show work

10. In the diagram below, transversal $\overleftrightarrow{TU}$ intersects $\overleftrightarrow{PQ}$ and $\overleftrightarrow{RS}$ at *V* and *W*, respectively.  If m∠*TVQ* = 5*x* - 22 and m∠*VWS* = 3*x* + 10, for which value of *x* is *PQ* ∥ *RS*? 1. 6 2. 16 3. 24 4. 28	***Explain your choice***
11. Use the diagram below to answer the following question.  What is the measure of ∠2? 1. 169° 2. 134° 3. 129° 4. 113°	***Show work and justify with theorems.***
12 As shown in the diagram below, when hexagon *ABCDEF* is reflected over line *m*, the image is hexagon *A'B'C'D'E'F'*.  Under this transformation, which property is *not* preserved? 1)area 2) distance 3)orientation 4)angle measure	***Explain***

13. In the diagram below of isosceles ΔABC, the measure of vertex angle B is 80°. If $\overline{AC}$ extends to point D, what is m$\angle BCD$?  1. 50 2. 80 3. 100 4. 130	***Explain/Show work.***
14. The center of circle Q has coordinates $(3,-2)$. If circle Q passes through $R(7,1)$, what is the length of its diameter? (1) 50 (3) 10 (2) 25 (4) 5	***Show Work on the diagrams!!!***
15. Dilate and state the coordinate of the image after dilating by ½ using the center (3, -2).  	***State coordinates of the image and graph the dilation.***
16. Solve for x.  	***Show work***

17. Solve for x.  scale factor from A to B = 5 : 6	***Show work***
18. In the diagram below, $\triangle ABC \sim \triangle DEC$.  If $AC = 12$, $DC = 7$, $DE = 5$, and the perimeter of $\triangle ABC$ is 30, what is the perimeter of $\triangle DEC$?	***Show work***
19. Find RQ  	***Show work***
20. As shown in the diagram below, the angle of elevation from a point on the ground to the top of the tree is 34°.  If the point is 20 feet from the base of the tree, what is the height of the tree, to the *nearest tenth of a foot*?	***Show work***