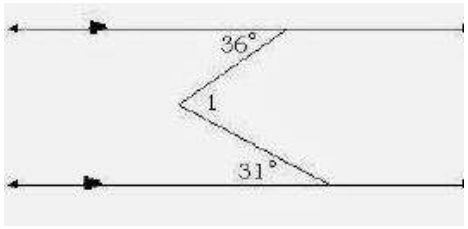
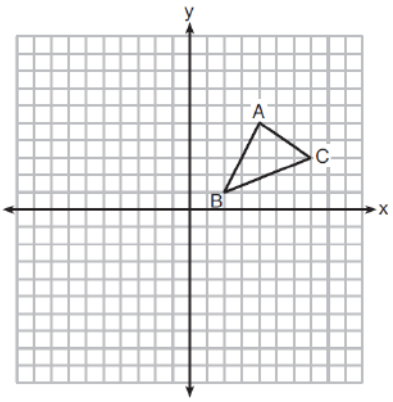
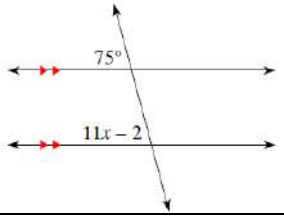
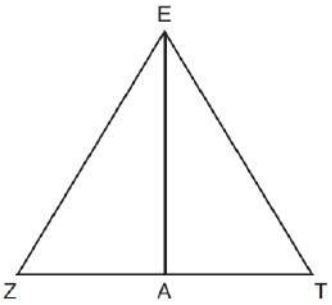
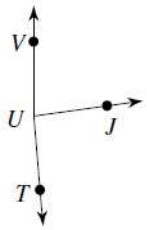
Name _____ **Date Due:** _____

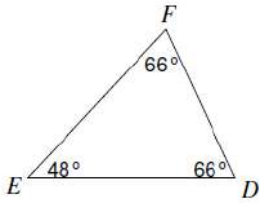
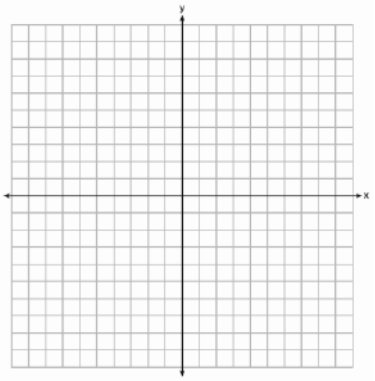
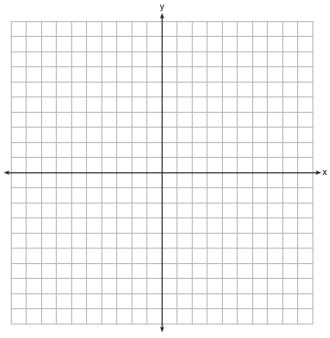
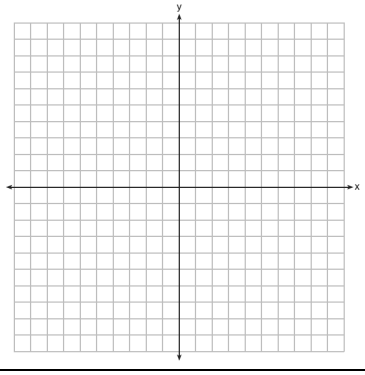
Geometry Regents Review #4

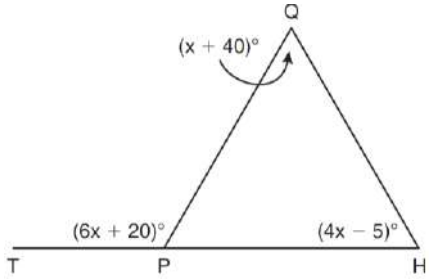
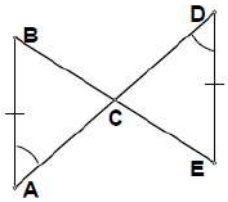
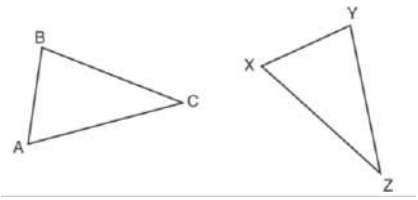
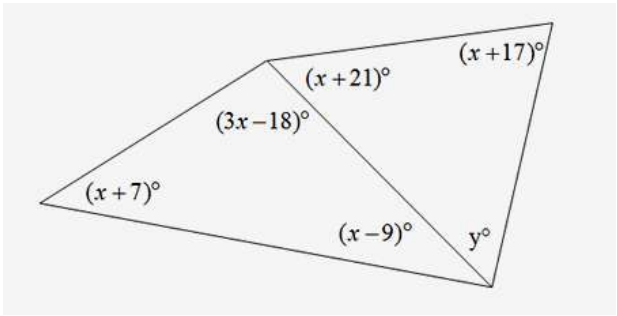
Directions: ***Answer ALL questions. Show ALL work in column 2.***

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. Find the m<1. 1) 36^0 2) 31^0 3) 67^0 4) 144^0 	***Show work***
2. In the diagram below, $\triangle ABC$ has vertices $A(4,5)$, $B(2,1)$, and $C(7,3)$.  What is the slope of the altitude drawn from A to $\overline{BC}$? (1) $\frac{2}{5}$ (3) $-\frac{1}{2}$ (2) $\frac{3}{2}$ (4) $-\frac{5}{2}$	***Explain and/or Show work***
3. What is the slope of a line perpendicular to the line whose equation is $2y = -6x + 8$? 1) -3 2) $\frac{1}{6}$ 3) $\frac{1}{3}$ 4) -6	***Show work***
4. The graphs of the equations $y = x^2 + 4x - 1$ and $y + 3 = x$ are drawn on the same set of axes. At which point do the graphs intersect? 1. (1,4) 2. (1,-2) 3. (-2,1) 4.(-2, -5)	***Show work***
5. Solve for x. 1) 9.72 2) 7 3) -7 4) 6.63 	***Show work***

6. Line segment EA is the perpendicular bisector of $\overline{ZT}$, and $\overline{ZE}$ and $\overline{TE}$ are drawn.  Which conclusion can *not* be proven? (1) $\overline{EA}$ bisects angle ZET. (2) Triangle EZT is equilateral. (3) $\overline{EA}$ is a median of triangle EZT. (4) Angle Z is congruent to angle T.	***Explain your choice!!!!***
7. If two isosceles triangles have congruent vertex angles, then the triangles must be 1) congruent 2) equilateral 3) right 4) similar	***Explain your choice and/or show work!!!!***
8. $m\angle VUT = 175°$, $m\angle VUJ = 17x - 3$, and $m\angle JUT = 17x + 8$. Find x. 1) 5 2) 5.14 3)180 4) 2.5  	***Show work***
9. In an isosceles triangle, the legs are 4 more than the length of the base. If the total perimeter is 44, find the length of the legs. 1) 16 2) 12 3) 5.5 4) 4.9	***Show work/Explain***

10. Name the shortest side. 1) $\overline{EF}$ 2) $\overline{DF}$ 3) $\overline{DE}$ 4) none of the above  	***Explain/Show work***
11. In ΔTUV UV= 17 ft. TV= 14 ft. TU = 9 ft. The smallest angle of triangle TUV is 1) T 2) U 3) V 4) can't determine	***Explain/Show work***
12 A regular decagon is rotated n degrees about its center, carrying the decagon onto itself. The value of n could be (1) 10° (3) 225° (2) 150° (4) 252°	***Show work***
13. The midpoint of $\overline{AB}$ is M. If the coordinates of A are (2, -6) and the coordinates of M are (5, -1), what are the coordinates of B? 1) (3, 5) 2) (-4, -8) 3) (8, 4) 4) (3.5, -3.5)	***Show work*** 
14. What are the coordinates of the image of point (-1, 2) under a reflection in the line y= -x? 1. (-1, 2) 2. (1, -2) 3. (2, -1) 4. (-2, 1)	***Explain/Show work*** 
15. If the coordinates of P are (-2, 7), what are the coordinates of $(T_{2,0} \circ r_{y=x})(P)$? 1. (0,7) 2. (-7, 4) 3. (9,-2) 4.(-2, -9)	***Explain/Show work*** 

16. In the diagram below of $\triangle HQP$, side $\overline{HP}$ is extended through *P* to *T*, $m\angle QPT = 6x + 20$, $m\angle HQP = x + 40$, and $m\angle PHQ = 4x - 5$. **Find** $m\angle QPT$**.**  (Not drawn to scale)	***Show work***
17. Explain how you can prove triangle ABC congruent to triangle DEC.  	***Explanation:***
18. The vertices of triangle RAT have coordinates R (-1,5), A (-3,1) and T (1,3). What is the <u>perimeter</u> of triangle RAT in ***simplest radical form***?	***Show work***
19. In the diagram below of $\triangle ABC$ and $\triangle XYZ$, a sequence of rigid motions maps $\angle A$ onto $\angle X$, $\angle C$ onto $\angle Z$, and $\overline{AC}$ onto $\overline{XZ}$.  Determine and state whether $\overline{BC} \cong \overline{YZ}$. Explain why.	***Show work/Explain***
20. Determine the values of x and y.  	***Show work***