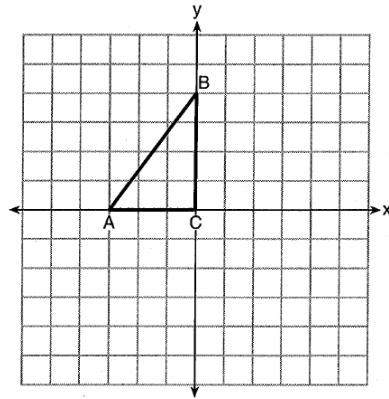


Name: \_\_\_\_\_  
Date: \_\_\_\_\_  
Class: \_\_\_\_\_

Geometry  
Review  
Graded Homework 21

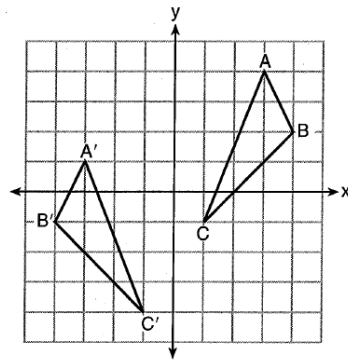
Show all of your work for every problem. The numbers in the brackets are the points that each problem is worth. Multiple Choice Problems are worth 3.  
**NO WORK = ZERO CREDIT**

- 1) [3] Triangle  $ABC$  is graphed on the set of axes below. Graph and label  $\triangle A'B'C'$ , the image of  $\triangle ABC$  after a reflection over the line  $x = 1$ .



- 2) [3] Directed line segment  $PT$  has endpoints whose coordinates are  $P(-2,1)$  and  $T(4,7)$ . Determine the coordinates of point  $J$  that divides the segment in the ratio 2 to 1.

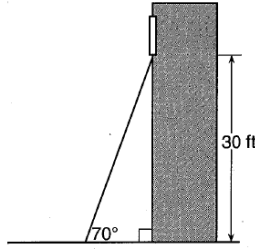
- 3) [3] As graphed on the set of axes below,  $\triangle A'B'C'$  is the image of  $\triangle ABC$  after a sequence of transformations.



Is  $\triangle A'B'C'$  congruent to  $\triangle ABC$ ? Use the properties of rigid motion to explain your answer.

4) [3]

A carpenter leans an extension ladder against a house to reach the bottom of a window 30 feet above the ground. As shown in the diagram below, the ladder makes a  $70^\circ$  angle with the ground. To the *nearest foot*, determine and state the length of the ladder.



5) [4]

Line  $\ell$  is mapped onto line  $m$  by a dilation centered at the origin with a scale factor of 2. The equation of line  $\ell$  is  $3x - y = 4$ . Determine and state an equation for line  $m$ .

6) [4] In rectangle RSPQ, the diagonals intersect at A.  $RS = 3x + 3$ ,  $SP = x + 1$ , and  $RA = x + 4$ . Find  $m\angle SAR$  to the nearest tenth.

7) [4] Segment AB has endpoints A(1, 6) and B(5, 9). Find the equation of a bisector of segment AB that passes through (4, 2). (this is not a perpendicular bisector)

8) [4]  $\angle QRS$  is split into two pieces by  $\overrightarrow{RT}$ . If  $m\angle QRS = 10x + 16$ ,  $m\angle QRT = 3x + 9$ , and  $m\angle TRS = 6x + 11$  what is the ration of  $m\angle QRS:m\angle QRT$  in lowest terms?