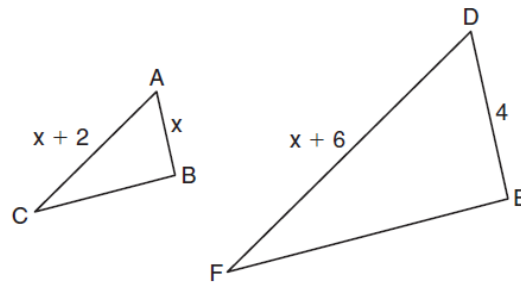


Name: \_\_\_\_\_  
Date: \_\_\_\_\_  
Class: \_\_\_\_\_

Geometry  
Review  
Graded Homework 10

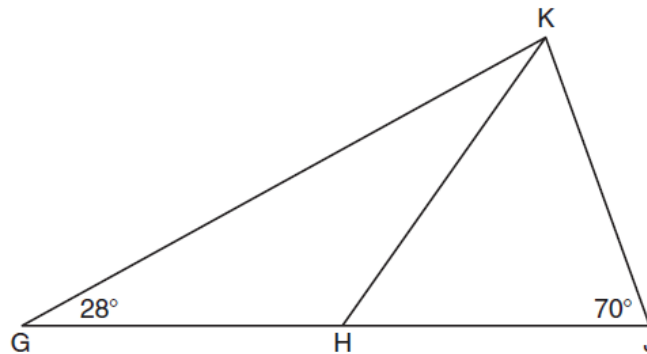
Show all of your work for every problem. The numbers in the brackets are the points that each problem is worth. Multiple Choice Problems are worth 3.  
NO WORK = ZERO CREDIT

- 1) [4] In the diagram below,  $\triangle ABC \sim \triangle DEF$ ,  $DE = 4$ ,  $AB = x$ ,  $AC = x + 2$ , and  $DF = x + 6$ . Determine the length of  $\overline{AB}$ . [Only an algebraic solution can receive full credit.]



- 2) [3]

In the diagram below of  $\triangle GJK$ ,  $H$  is a point on  $\overline{GJ}$ ,  $\overline{HJ} \cong \overline{JK}$ ,  $m\angle G = 28$ , and  $m\angle GJK = 70$ . Determine whether  $\triangle GHK$  is an isosceles triangle and justify your answer.



- 3) [3] Which equation represents the perpendicular bisector of  $\overline{AB}$  whose endpoints are  $A(8,2)$  and  $B(0,6)$ ?

(1)  $y = 2x - 4$                       (3)  $y = -\frac{1}{2}x + 6$

(2)  $y = -\frac{1}{2}x + 2$                       (4)  $y = 2x - 12$

- 4) [3] The coordinates of point  $A$  are  $(-3a, 4b)$ . If point  $A'$  is the image of point  $A$  reflected over the line  $y = x$ , the coordinates of  $A'$  are

(1)  $(4b, -3a)$                       (3)  $(-3a, -4b)$

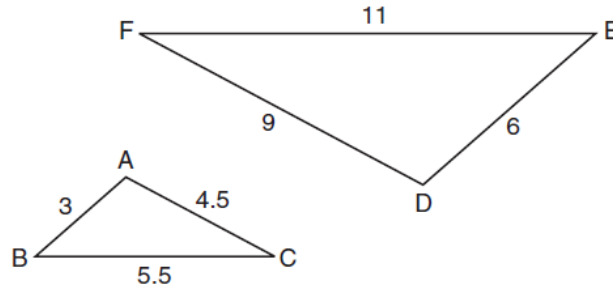
(2)  $(3a, 4b)$                       (4)  $(-4b, -3a)$

- 5) [3] If  $\triangle A'B'C'$  is the image of  $\triangle ABC$ , under which transformation will the triangles *not* be congruent?
- (1) reflection over the  $x$ -axis
  - (2) translation to the left 5 and down 4
  - (3) dilation centered at the origin with scale factor 2
  - (4) rotation of  $270^\circ$  counterclockwise about the origin
- 6) [3] Which expression is always equivalent to  $\sin x$  when  $0^\circ < x < 90^\circ$ ?

- (1)  $\cos(90^\circ - x)$
- (2)  $\cos(45^\circ - x)$
- (3)  $\cos(2x)$
- (4)  $\cos x$

(pick three angles in the range and test them)

- 7) [3] In the diagram below,  $\triangle DEF$  is the image of  $\triangle ABC$  after a clockwise rotation of  $180^\circ$  and a dilation where  $AB = 3$ ,  $BC = 5.5$ ,  $AC = 4.5$ ,  $DE = 6$ ,  $FD = 9$ , and  $EF = 11$ .



Which relationship must always be true?

- (1)  $\frac{m\angle A}{m\angle D} = \frac{1}{2}$
- (2)  $\frac{m\angle C}{m\angle F} = \frac{2}{1}$
- (3)  $\frac{m\angle A}{m\angle C} = \frac{m\angle F}{m\angle D}$
- (4)  $\frac{m\angle B}{m\angle E} = \frac{m\angle C}{m\angle F}$

- 8) [3] A triangle is dilated by a scale factor of 3 with the center of dilation at the origin. Which statement is true?
- (1) The area of the image is nine times the area of the original triangle.
  - (2) The perimeter of the image is nine times the perimeter of the original triangle.
  - (3) The slope of any side of the image is three times the slope of the corresponding side of the original triangle.
  - (4) The measure of each angle in the image is three times the measure of the corresponding angle of the original triangle.