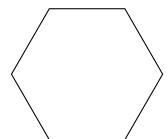
8 January 2020

Name:

7.5 Homework: Symmetry transformations

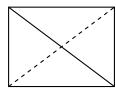
1. After a dilation with center (0,0), the image of \overline{MN} is $\overline{M'N'}$. If MN=7.2 and M'N'=36, find the scale factor of this dilation.

- 2. Circle YES or NO to indicate whether the given transformation maps the hexagon onto itself.
 - (a) Yes No A rotation of 120° counterclockwise around point D.
 - (b) Yes No A reflection over \overrightarrow{AE}
 - (c) Yes No A reflection over a line through the midpoints of \overline{BC} and \overline{EF} .
 - (d) Yes No A rotation of 60° clockwise around the hexagon's center.



- 3. The line l has the equation $y = -\frac{3}{5}x + 4$. To each line below, circle whether l is parallel, perpendicular, or neither.
 - (a) parallel perpendicular neither $y = \frac{3}{5}x 2$
 - (b) parallel perpendicular neither $y = \frac{5}{3}x + 9$
 - (c) parallel perpendicular neither 3x 5y = -15
 - (d) parallel perpendicular neither 5x 3y = 6

4. The figure shows a rectangle (not a square).



Which transformations carries the rectangle onto itself? Mark each True or False.

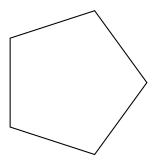
(a) A reflection over the solid diagonal

True False

(b) A reflection over the dashed diagonal

True False

- (c) A clockwise rotation of 90° about the intersection of the diagonals True False
- (d) A clockwise rotation of 180° about the intersection of the diagonals True False
- 5. What is the smallest non-zero angle of rotation about its center that would map the pentagon onto itself?



6. In the diagram below, the chords \overline{AE} and \overline{BD} intersect at C, with $\triangle ABC \sim \triangle DEC$, $BC=3,\ AC=4,\ \text{and}\ AE=11.$ Determine the length of \overline{CD} .

