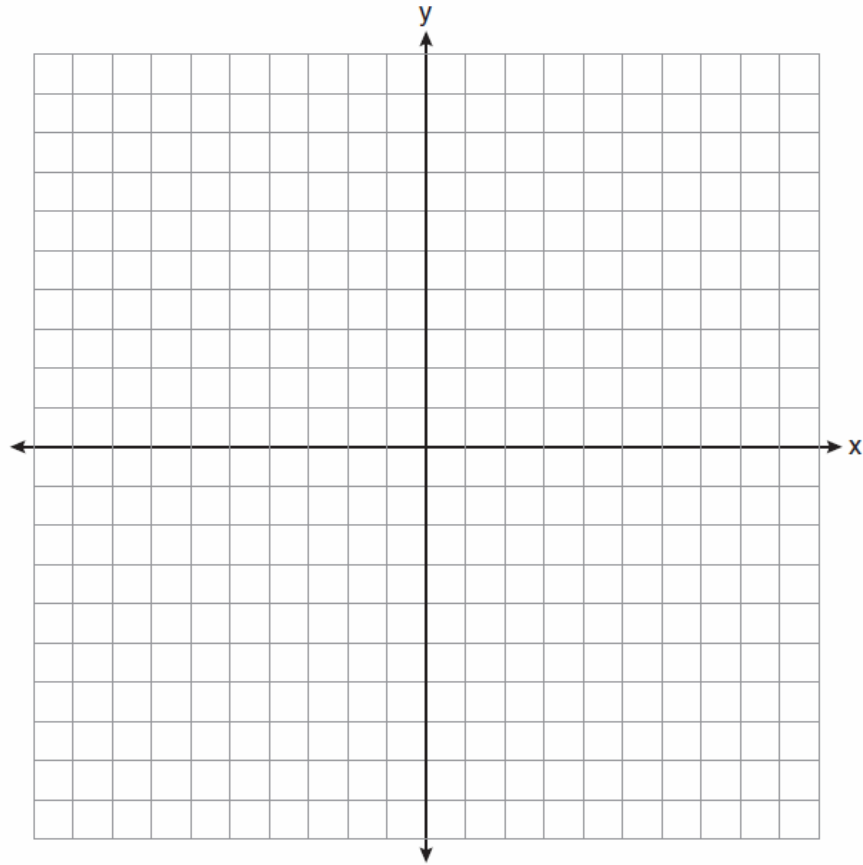**Geometry**
Weekly Homework 10182019

Question 1.

35 On the set of coordinate axes below, graph the locus of points that are equidistant from the lines $y = 6$ and $y = 2$ and also graph the locus of points that are 3 units from the y-axis. State the coordinates of *all* points that satisfy *both* conditions.
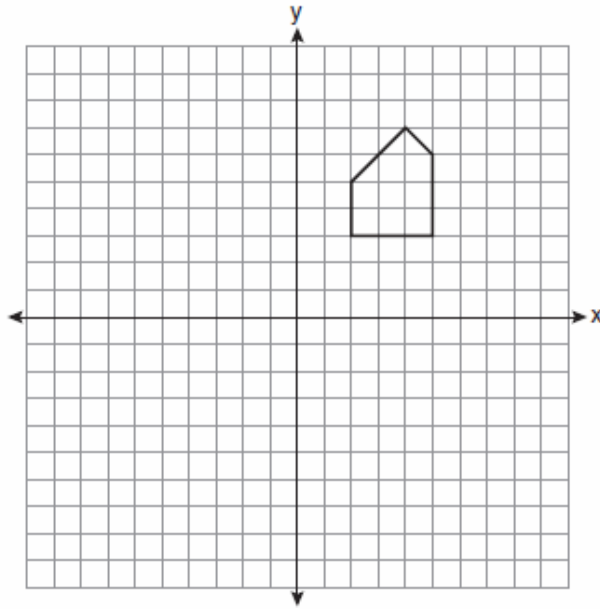
Question 2.

30 Using a compass and straightedge, on the diagram below of $\overleftrightarrow{RS}$, construct an equilateral triangle with $\overline{RS}$ as one side. [Leave all construction marks.]

Question 3.

32 A pentagon is drawn on the set of axes below. If the pentagon is reflected over the y-axis, determine if this transformation is an isometry.

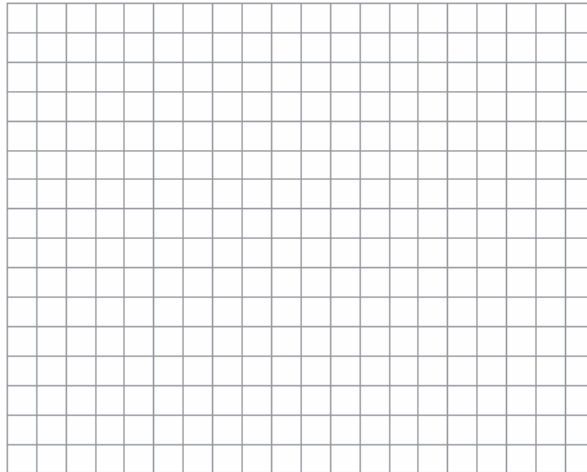Justify your answer. [The use of the set of axes below is optional.]

Question 4.

38 Given: $\triangle ABC$ with vertices $A(-6,-2)$, $B(2,8)$, and $C(6,-2)$

$\overline{AB}$ has midpoint D, $\overline{BC}$ has midpoint E, and $\overline{AC}$ has midpoint F

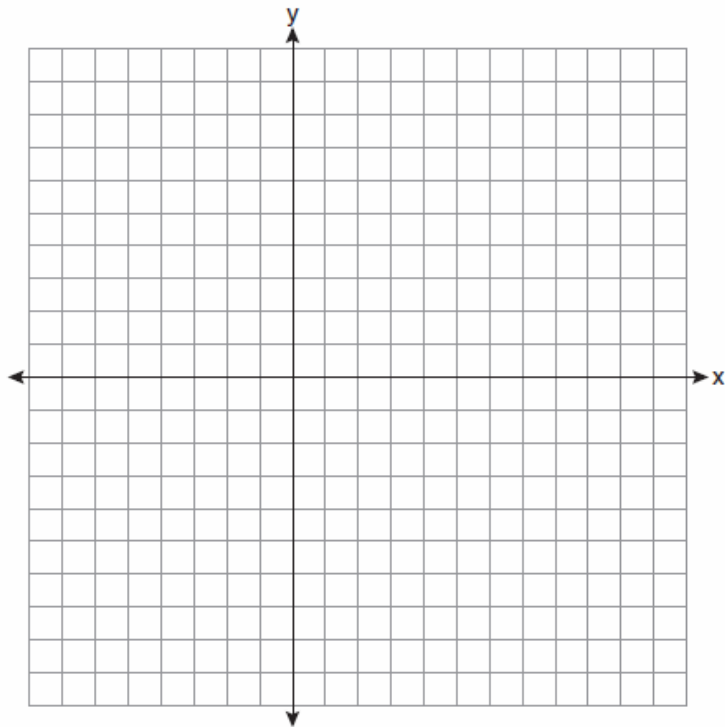Prove: $ADEF$ is a parallelogram

$ADEF$ is *not* a rhombus

[The use of the grid below is optional.]

Question 5.

34 Triangle ABC has vertices $A(3,3)$, $B(7,9)$, and $C(11,3)$. Determine the point of intersection of the medians, and state its coordinates. [The use of the set of axes below is optional.]

Question 6.

36 As shown on the set of axes below, $\triangle GHS$ has vertices $G(3,1)$, $H(5,3)$, and $S(1,4)$. Graph and state the coordinates of $\triangle G''H''S''$, the image of $\triangle GHS$ after the transformation $T_{-3,1} \circ D_2$.
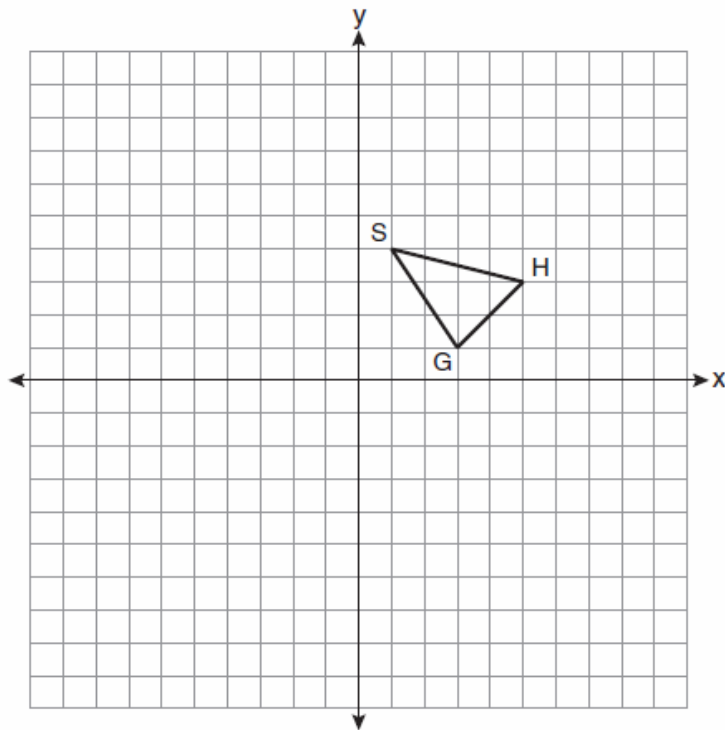
Question 7.

Line segment JK in the xy-coordinate plane has endpoints with coordinates $(-4, 11)$ and $(8, -1)$. What are **two** possible locations for point M so that M divides $\overline{JK}$ into two parts with lengths in a ratio of 1:3?

Indicate **both** locations.

A. $(-2, 9)$

B. $(-1, 8)$

C. $(0, 7)$

D. $(1, 6)$

E. $(3, 4)$

F. $(4, 3)$

G. $(5, 2)$

H. $(6, 1)$

Question 8.

Triangle *KLM* is the pre-image of △*K'L'M'*, before a transformation. Determine if these two figures are similar.
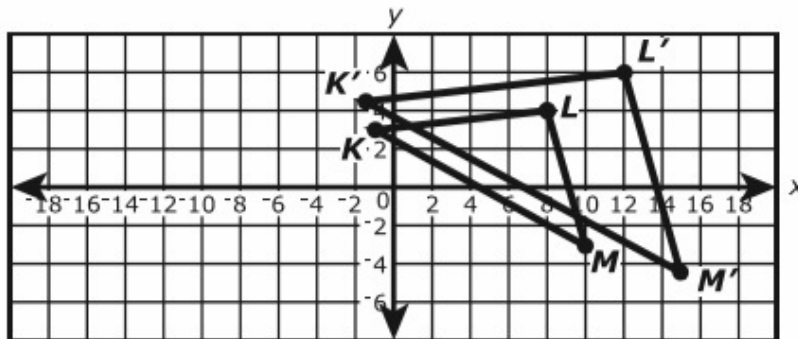
Which statements are true?

Select **all** that apply.

A. Triangle *KLM* is similar to △*K'L'M'*.

B. Triangle *KLM* is not similar to △*K'L'M'*.

C. There was a dilation of scale factor 0.5 centered at the origin.

D. There was a dilation of scale factor 1 centered at the origin.

E. There was a dilation of scale factor 1.5 centered at the origin.

F. There was a translation left 0.5 and up 1.5.

G. There was a translation left 1.5 and up 0.5.