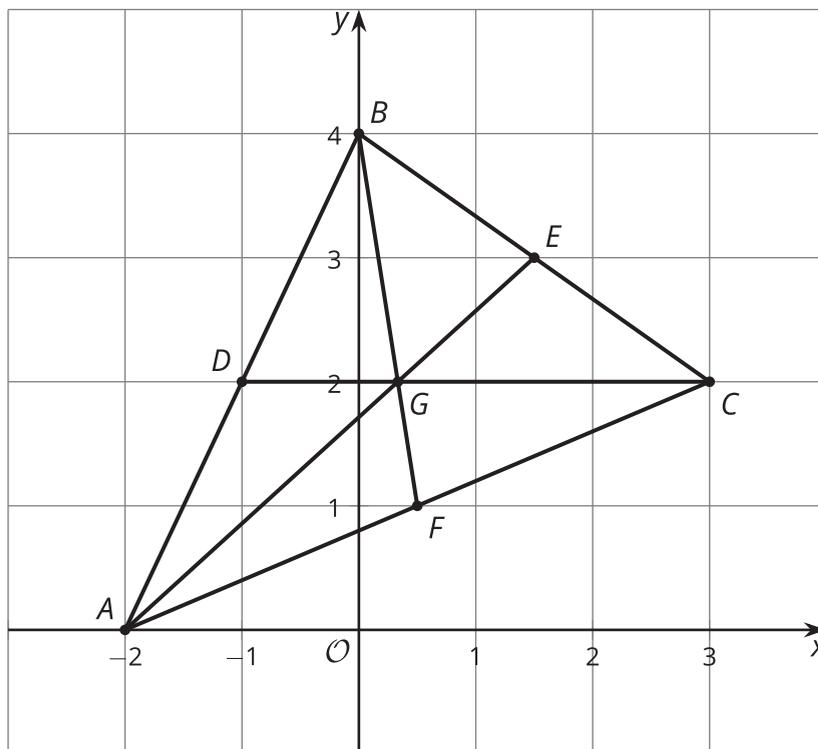


## Lesson 16 Practice Problems

1. Triangle  $ABC$  and its medians are shown.

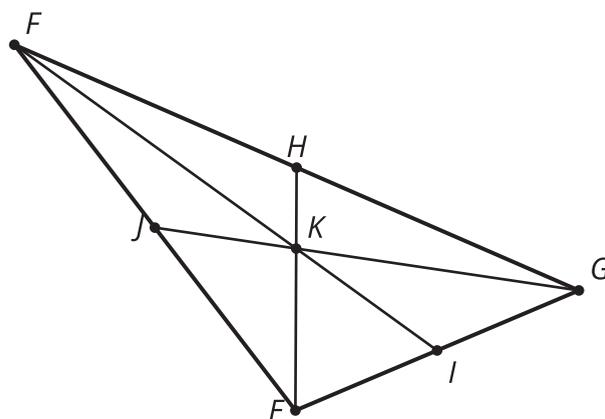


Select **all** statements that are true.

- A. The medians intersect at  $(\frac{1}{3}, 2)$ .
- B. The medians and altitudes are the same for this triangle.
- C. An equation for median  $AE$  is  $y = \frac{6}{7}(x + 2)$ .
- D. Point  $G$  is  $\frac{2}{3}$  of the way from  $A$  to  $E$ .
- E. Median  $BF$  is congruent to median  $CD$ .

2. Triangle  $ABC$  has vertices at  $(-2, 0)$ ,  $(-1, 6)$ , and  $(6, 0)$ . What is the point of intersection of the triangle's medians?

3. Triangle  $EFG$  and its medians are shown.



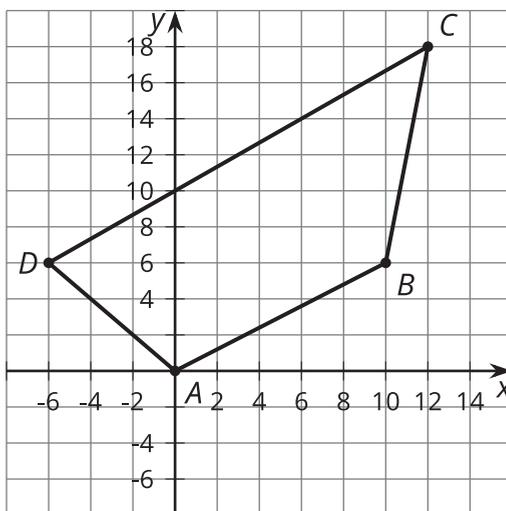
Match each pair of segments with the ratios of their lengths.

- |              |          |
|--------------|----------|
| A. $GK : KJ$ | 1. 1 : 1 |
| B. $GH : HF$ | 2. 1 : 2 |
| C. $HK : KE$ | 3. 2 : 1 |

4. Given  $A = (-3, 2)$  and  $B = (7, -10)$ , find the point that partitions segment  $AB$  in a 1 : 4 ratio.

(From Unit 6, Lesson 15.)

5. Graph the image of quadrilateral  $ABCD$  under a dilation using center  $A$  and scale factor  $\frac{1}{3}$ .

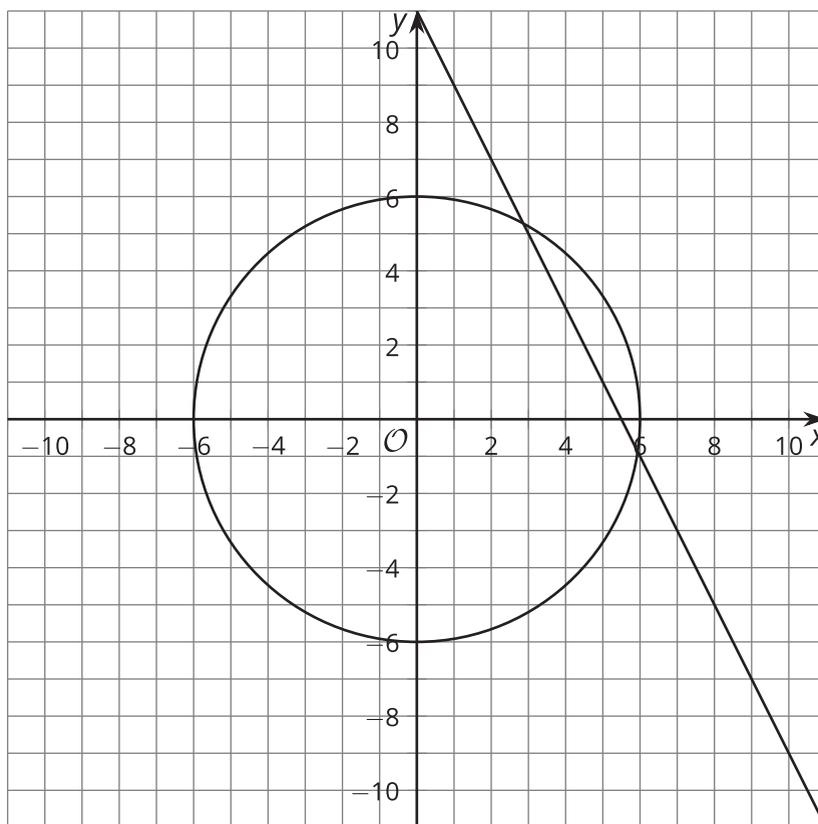


(From Unit 6, Lesson 15.)

6. A trapezoid is a quadrilateral with at least one pair of parallel sides. Show that the quadrilateral formed by the vertices  $(0, 0)$ ,  $(5, 2)$ ,  $(10, 10)$ , and  $(0, 6)$  is a trapezoid.

(From Unit 6, Lesson 14.)

7. Here are the graphs of the circle centered at  $(0, 0)$  with radius 6 units and the line given by  $2x + y = 11$ . Determine whether the circle and the line intersect at the point  $(3, 5)$ . Explain or show your reasoning.



(From Unit 6, Lesson 13.)

8. A parabola has focus  $(-3, 2)$  and directrix  $y = -3$ . The point  $(a, 5)$  is on the parabola. How far is this point from the focus?
- A. 8 units
  - B. 5 units
  - C. 3 units
  - D. 2 units

(From Unit 6, Lesson 8.)