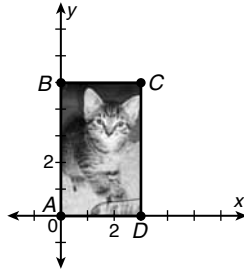


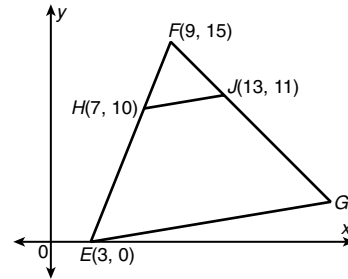
**LESSON** **7-6** **Problem Solving**  
**Dilations and Similarity in the Coordinate Plane**

1. The figure shows a photograph on grid paper. What are the coordinates of  $C'$  if the photograph is enlarged with scale factor  $\frac{4}{3}$ ?



3. Triangle  $LMN$  has vertices  $L(-10, 2)$ ,  $M(-4, 11)$ , and  $N(6, -6)$ . Find the vertices of the image of  $\triangle LMN$  after a dilation with scale factor  $\frac{5}{2}$ .

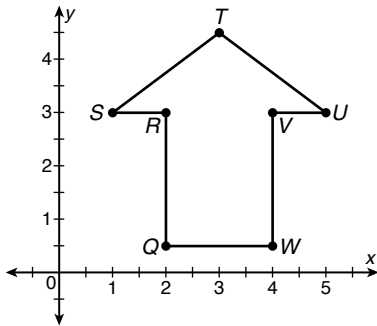
2. In the figure,  $\triangle HFJ \sim \triangle EFG$ . Find the coordinates of  $G$  and the scale factor.



4. Triangle  $HJM$  has vertices  $H(-36, 0)$ ,  $J(0, 20)$ , and  $M(0, 0)$ . Triangle  $H'J'M'$  has two vertices at  $H'(-27, 0)$  and  $M'(0, 0)$ , and  $\triangle H'J'M'$  is a dilation image of  $\triangle HJM$ . Find the coordinates of  $J'$  and the scale factor.

**Choose the best answer.**

5. The arrow is cut from a logo. The artist needs to make a copy five times as large for a sign. If the coordinates of  $T$  are  $T(3, 4.5)$ , what are the coordinates of  $T'$  after the arrow is dilated with scale factor 5?



- A  $T'(15, 22.5)$   
 B  $T'(7.5, 9)$   
 C  $T'(4.5, 6.75)$   
 D  $T'(2.5, 20)$

6. Triangle  $QRS$  has vertices  $Q(-7, 3)$ ,  $R(9, 8)$ , and  $S(2, 16)$ . What is the scale factor if the vertices after a dilation are  $Q'(-10.5, 4.5)$ ,  $R'(13.5, 15)$ , and  $S'(3, 24)$ ?

- F  $\frac{1}{3}$   
 G  $\frac{1}{2}$   
 H  $\frac{2}{3}$   
 J  $\frac{3}{2}$

7. A triangle has vertices  $H(-4, 2)$ ,  $J(-8, 6)$ , and  $K(0, 6)$ . If  $\triangle ABC \sim \triangle HJK$ , what are possible vertices of  $\triangle ABC$ ?

- A  $A(-4, 3)$ ,  $B(-2, 1)$ ,  $C(0, 3)$   
 B  $A(-2, 1)$ ,  $B(-4, 3)$ ,  $C(0, 3)$   
 C  $A(-2, 4)$ ,  $B(0, 6)$ ,  $C(-2, 8)$   
 D  $A(-2, 4)$ ,  $B(-8, 6)$ ,  $C(-4, 2)$