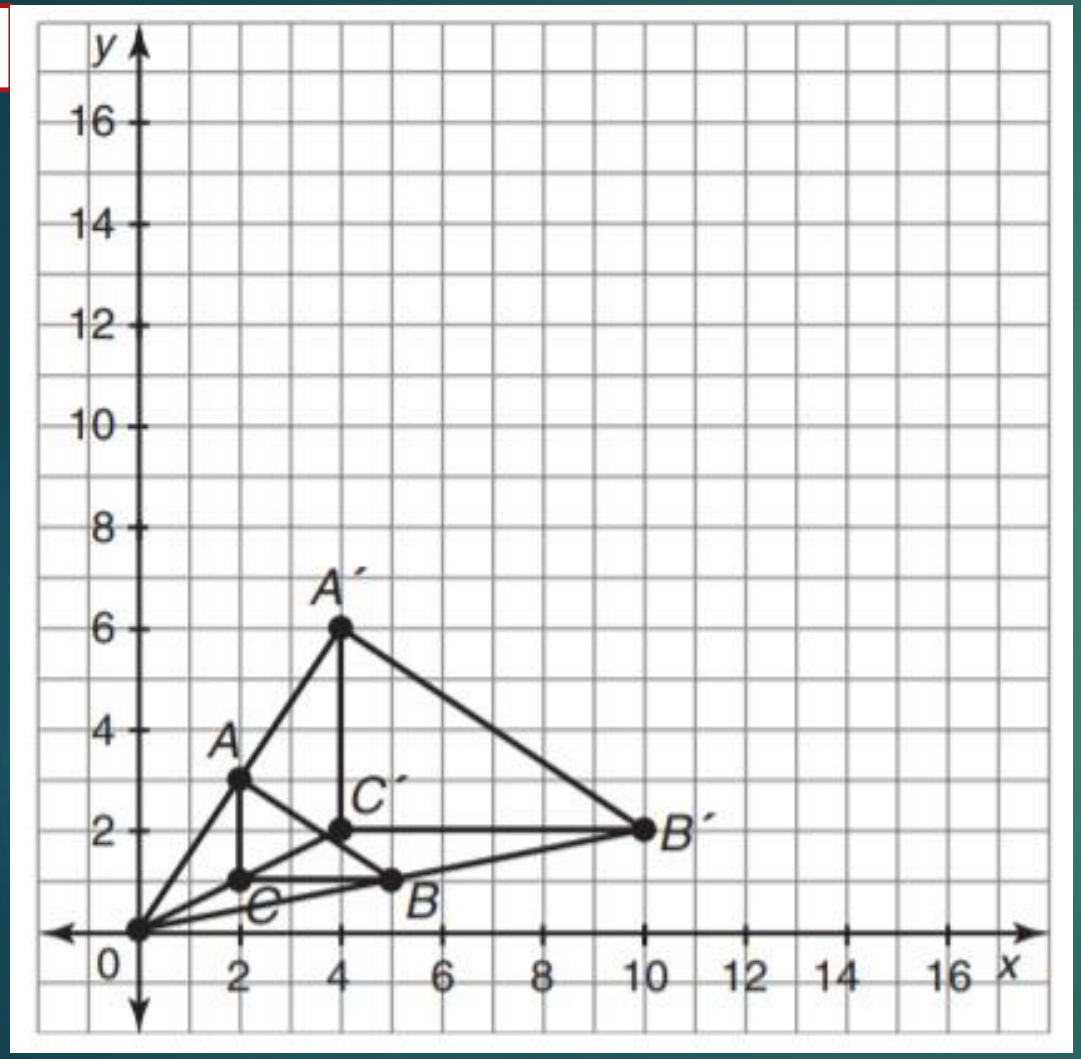
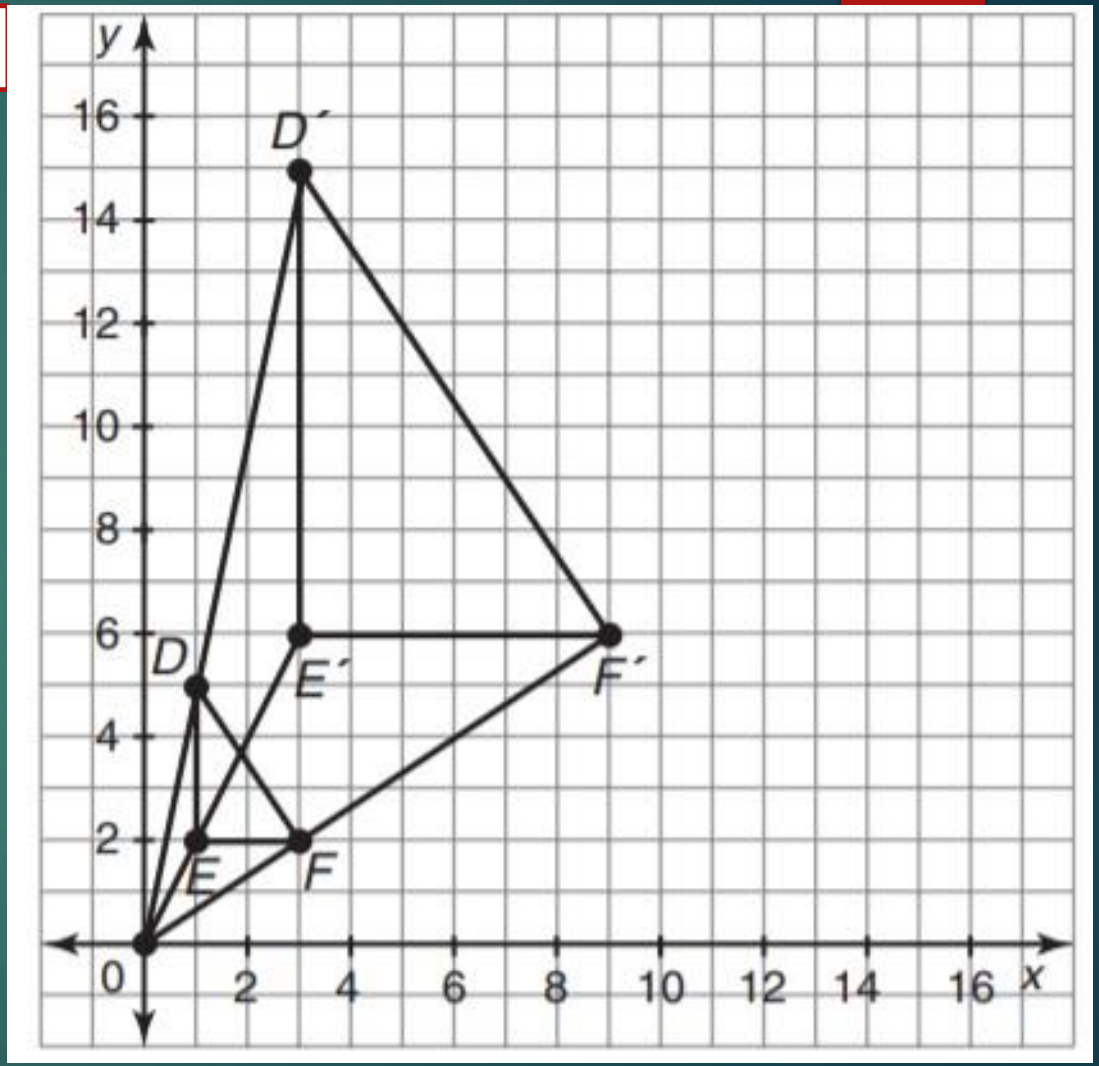
Given the image and pre-image, determine the scale factor.

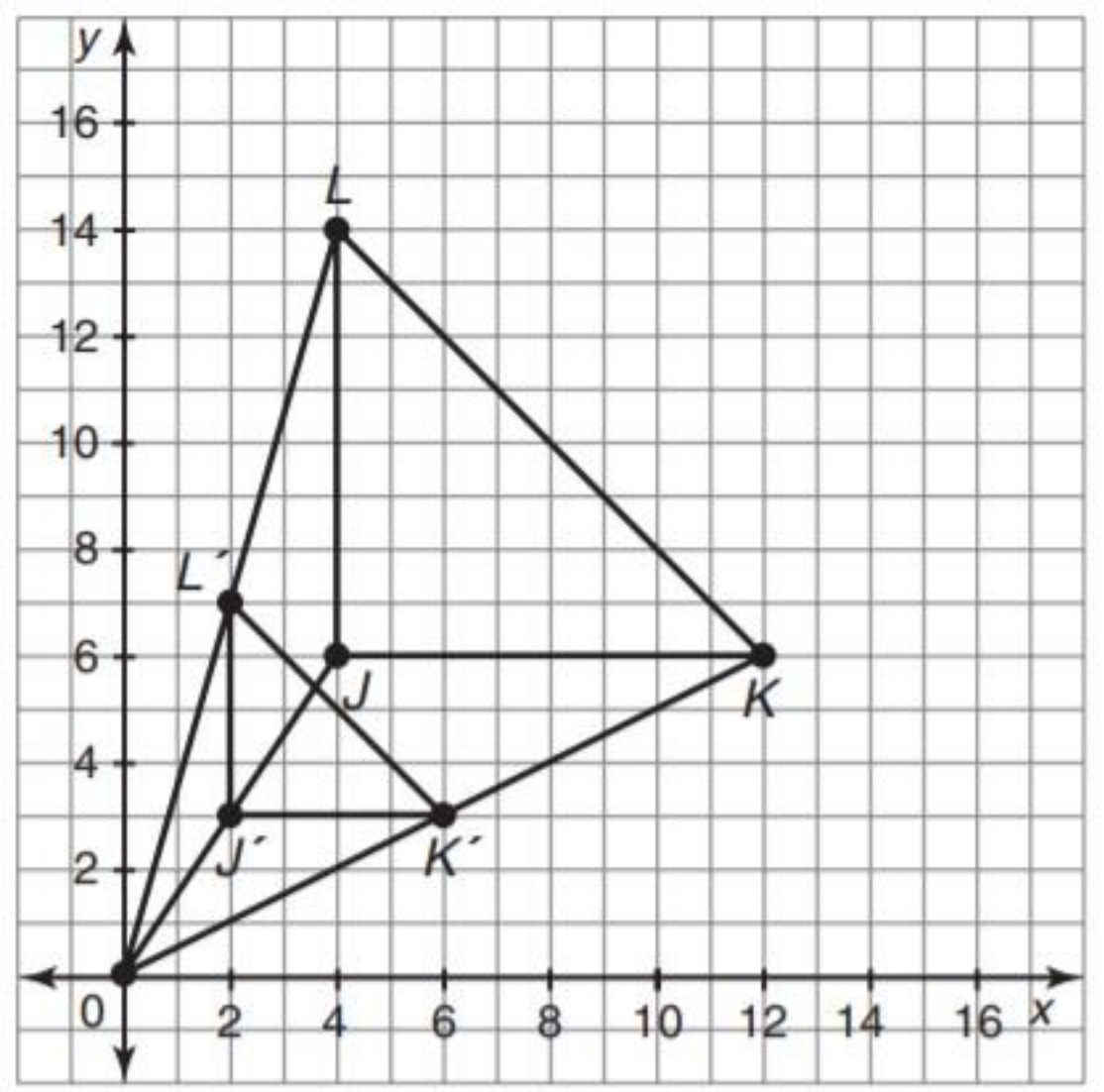
1)



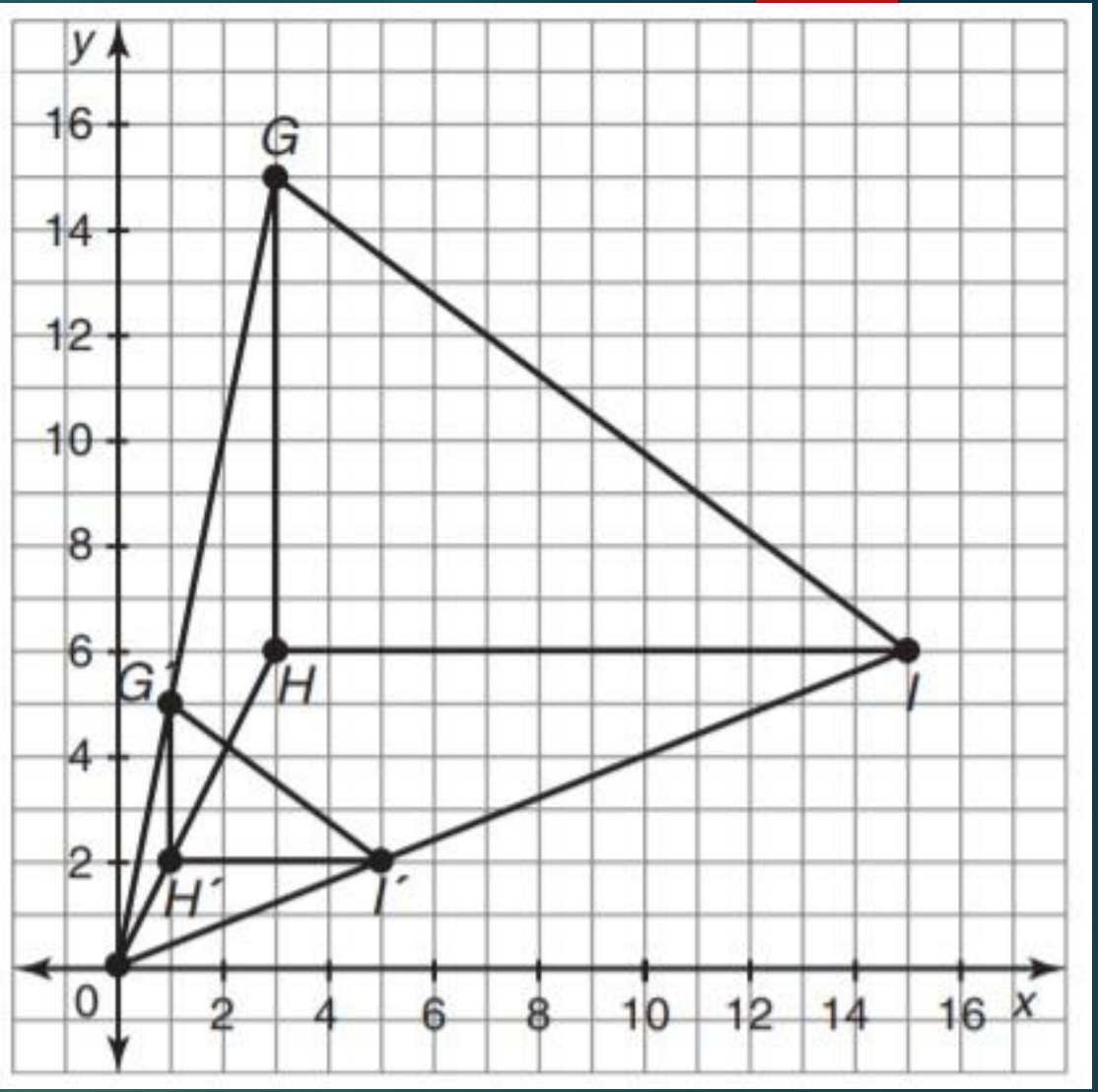
2)



3)


y
16
14
12
10
8
6
4
2
0
2
4
6
8
10
12
14
16
x
L
L´
J
J´
K
K´

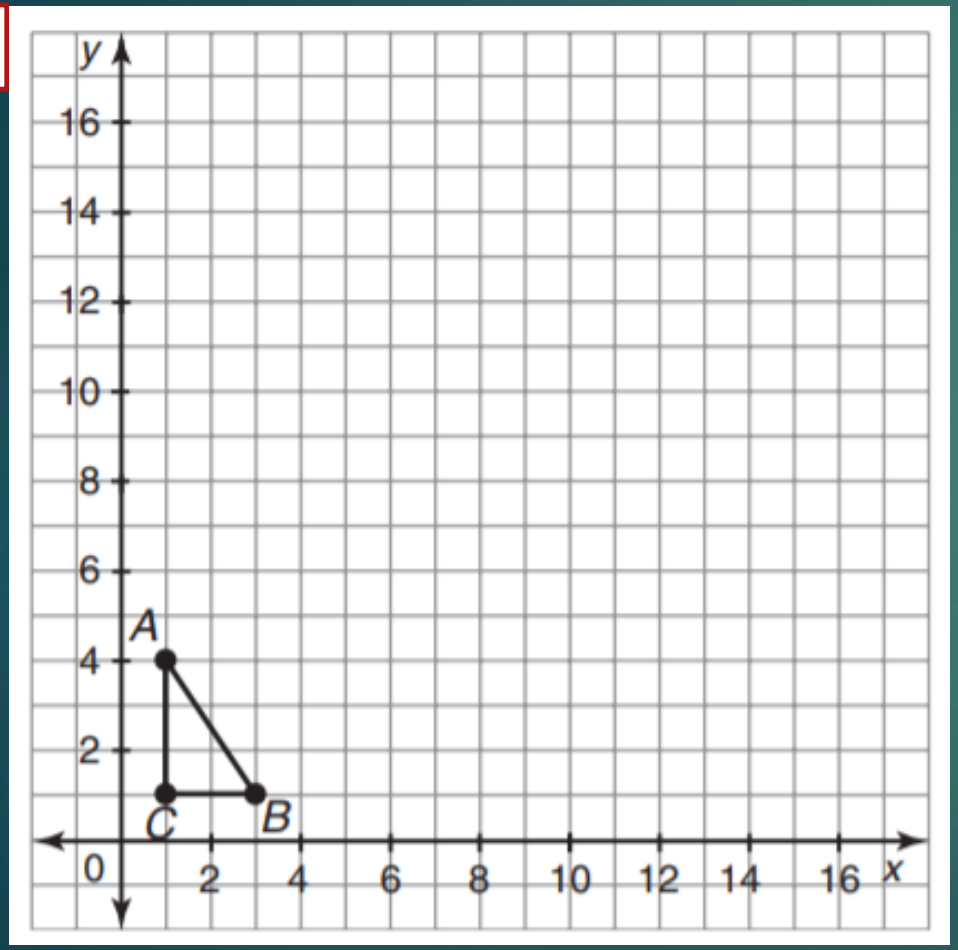
4)


y
16
14
12
10
8
6
4
2
0
2
4
6
8
10
12
14
16
x
G
G´
H
H´
I
I´

Given the pre-image, scale factor, and center of dilation, use a compass and straight edge to graph the image.

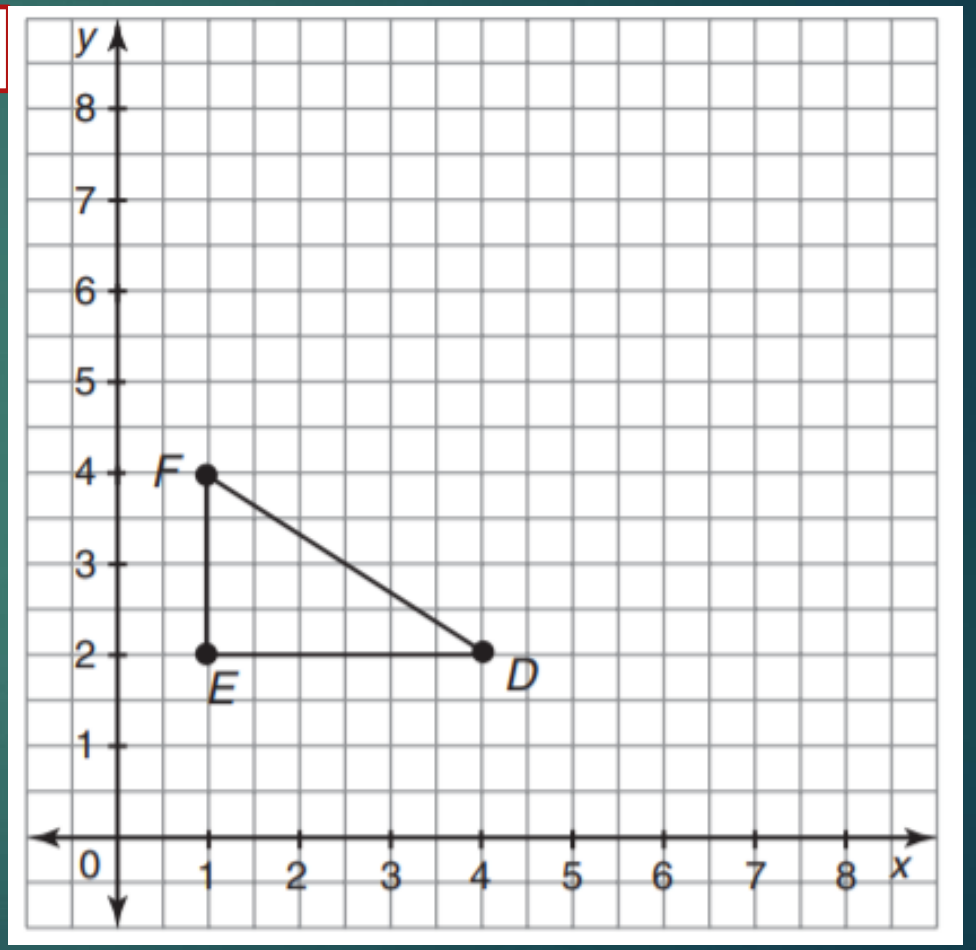
The scale factor is 4 and the center of dilation is the origin.

5)



The scale factor is 2 and the center of dilation is the origin.

6)



Use coordinate notation to determine the coordinates of the image.

Example:

$\triangle ABC$ has vertices $A(1, 2)$, $B(3, 6)$, and $C(9, 7)$. What are the vertices of the image after a dilation with a scale factor of 4 using the origin as the center of dilation?

$A(1, 2) \rightarrow A'(4(1), 4(2)) = A'(4, 8)$

$B(3, 6) \rightarrow B'(4(3), 4(6)) = B'(12, 24)$

$C(9, 7) \rightarrow C'(4(9), 4(7)) = C'(36, 28)$

7)

$\triangle DEF$ has vertices $D(8, 4)$, $E(2, 6)$, and $F(3, 1)$. What are the vertices of the image after a dilation with a scale factor of 5 using the origin as the center of dilation?

8)

$\triangle GHI$ has vertices $G(0, 5)$, $H(4, 2)$, and $I(3, 3)$. What are the vertices of the image after a dilation with a scale factor of 9 using the origin as the center of dilation?

9)

$\triangle JKL$ has vertices $J(6, 2)$, $K(1, 3)$, and $L(7, 0)$. What are the vertices of the image after a dilation with a scale factor of 12 using the origin as the center of dilation?

10)

$\triangle ABC$ has vertices $A(8, 4)$, $B(14, 16)$, and $C(6, 10)$. What are the vertices of the image after a dilation with a scale factor of $\frac{1}{2}$ using the origin as the center of dilation?

11)

$\triangle GHI$ has vertices $G(0, 20)$, $H(16, 24)$, and $I(12, 12)$. What are the vertices of the image after a dilation with a scale factor of $\frac{3}{4}$ using the origin as the center of dilation?