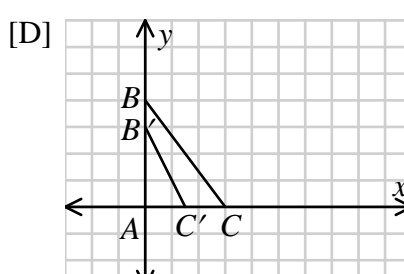
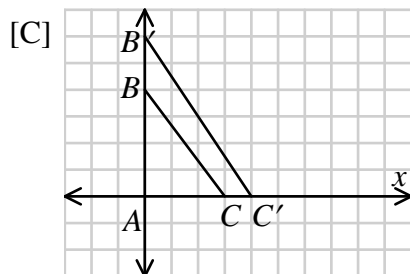
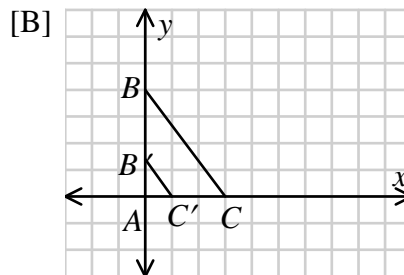
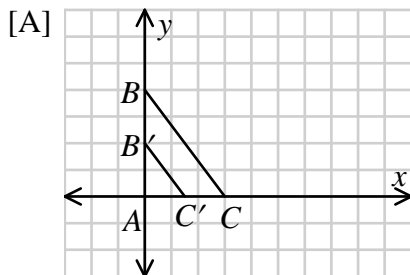


P.I. G.G.58: Define, investigate, justify, and apply similarities (dilations and the composition of dilations and isometries)

1. An overhead projector projects an image of a duck onto a screen. The image is eight times the size of the picture on the projector. If the image is 192 cm long, how long is the picture on the projector? Does this illustrate an isometry?
2. Graph $\triangle ABC$ with vertices $A(3, 1)$, $B(1, 4)$, and $C(6, 3)$. Find the coordinates of a dilation centered at $(0, 0)$ and with scale factor 1.5. Graph $\triangle A'B'C'$.

3. Which graph below shows a dilation that has a scale factor of $\frac{1}{2}$ and center at the origin?



4. Compare the quantity in Column A with the quantity in Column B.

The vertices of $\triangle ABC$ are $A(4, 3)$, $B(-2, 5)$, and $C(-1, -3)$. A dilation of size 3 centered at the origin is applied to $\triangle ABC$.

Column A

Column B

x - coordinate of B'

y - coordinate of C'

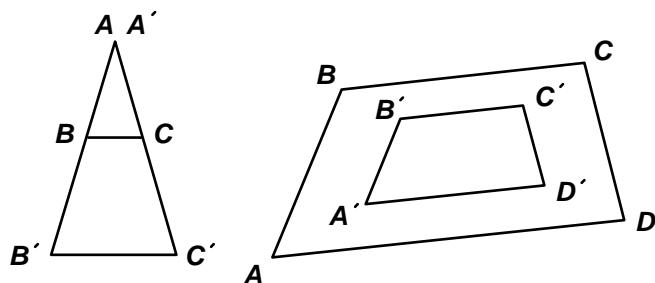
[A] The quantity in Column A is greater.

[B] The quantity in Column B is greater.

[C] The two quantities are equal.

[D] The relationship cannot be determined on the basis of the information supplied.

5. Compare the quantity in Column A with the quantity in Column B.



The scale factor for the dilation that maps

Column A

Column B

ABC onto $A'B'C'$

$ABCD$ onto $A'B'C'D'$

[A] The quantity in Column A is greater.

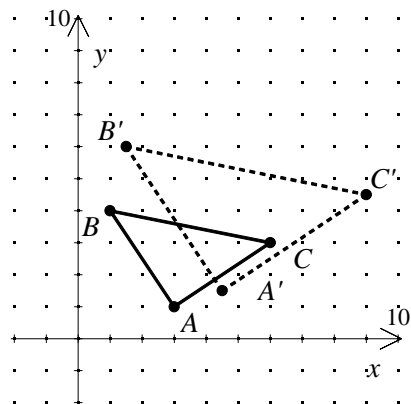
[B] The quantity in Column B is greater.

[C] The quantities are equal.

[D] The relationship cannot be determined on the basis of the information supplied.

[1] 24 cm; no, the size is changed _____

$A' (4.5, 1.5)$, $B' (1.5, 6)$, $C' (9, 4.5)$



[2] _____

[3] A _____

[4] A _____

[5] A _____