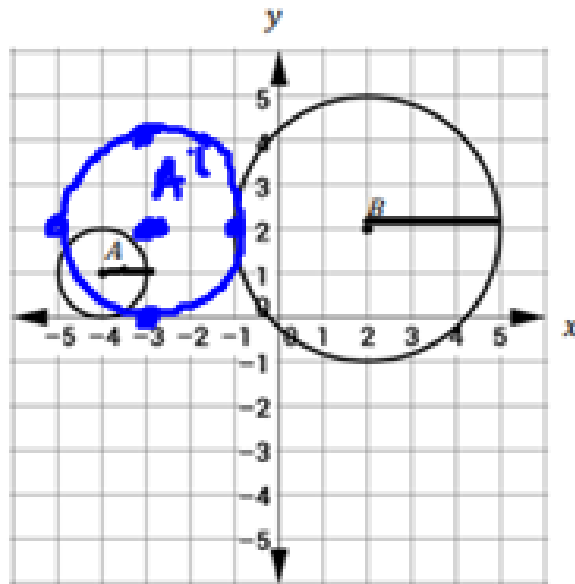


Transformations of Circles:

What transformation(s) will map circle A onto circle B?



$$(x, y) \rightarrow (x + 6, y + 1)$$

$$(x, y) \rightarrow (3A, 3A)$$

Graph the result of a transformation of circle A using the rule $(x, y) \rightarrow (x + 1, y + 1)$ followed by a dilation of scale factor two centered at point A'

$$(2A, 2A)$$

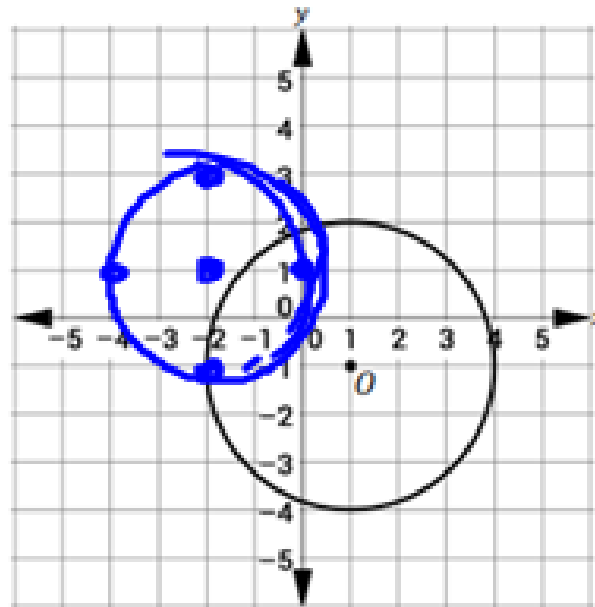
Describe where A'' will be located if circle A' is dilated by scale factor two centered at the origin instead of centered at point A'.

$$(x, y) \rightarrow (2x, 2y) \quad (-3, 2) \rightarrow (-6, 4)$$

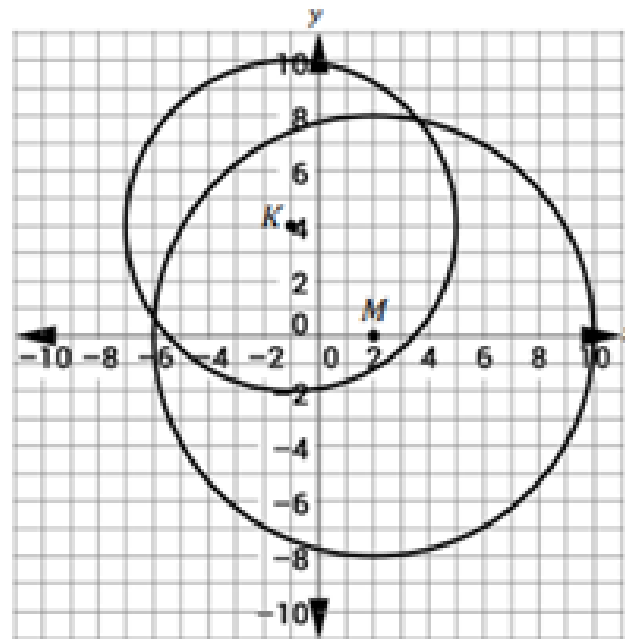
Your turn:

Graph the result of a transformation using the rule $(x, y) \rightarrow (x - 3, y + 2)$ followed by a dilation of scale factor $\frac{2}{3}$ centered on point O' on the coordinate plane below.

$$\frac{2}{3}$$



Consider the following diagram.



$$k = 6$$

$$m = 8$$

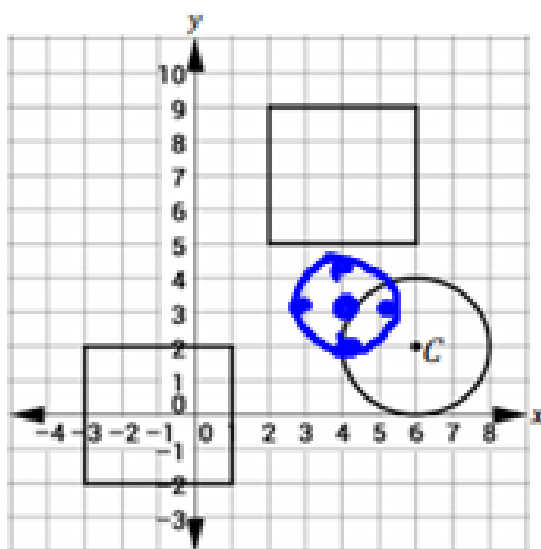
$$\frac{8}{6} = \frac{4}{3}$$

$$(x, y) \rightarrow (x+3, y-4)$$
$$(x, y) \rightarrow \left(\frac{4}{3}k, \frac{4}{3}k\right)$$

Describe the sequence of transformations that carry circle K onto circle M.

Informal Assessment:

Tom is building a new corral for his horse farm. He wants a corral with half the diameter of his current one. The schematic of his land is shown below. Circle C is the current corral. The rectangles represent barns. Select the series of transformations that would result in a corral that has the dimensions that Tom wants but would not interfere with any other structures.



$(6, 2)$
 $(3, 1)$

- A First, dilate the circle centered at point C . Then, $(x, y) \rightarrow (x - 9, y)$.
- B First, $(x, y) \rightarrow (x - 6, y + 1)$. Then, $(x, y) \rightarrow \left(\frac{3}{2}x, \frac{1}{2}y\right)$.
- C First, $(x, y) \rightarrow \left(\frac{1}{2}x, \frac{1}{2}y\right)$. Then, $(x, y) \rightarrow (x + 2, y + 5)$.
- D First, $(x - 2, y + 1)$. Then, $(x, y) \rightarrow \left(\frac{1}{2}x, \frac{1}{2}y\right)$ centered at point C' .