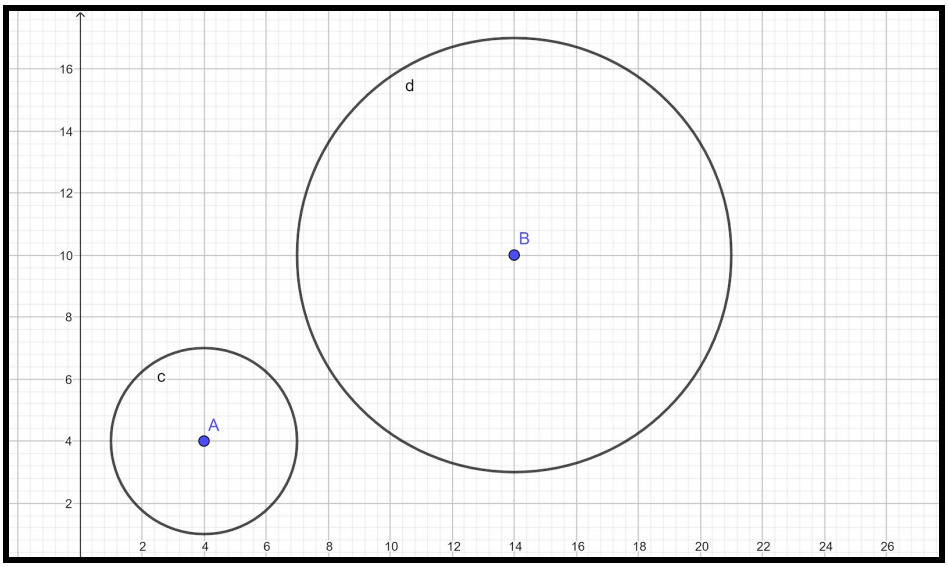
Are these circles similar?



1. Determine the radius of each circle in the picture above. *Hint: Double click onto picture about to open Geogebra file. Double click on outer edge of circle c then circle d for radius.*

   Circle c has radius _____units Circle d has radius _____ units

   What scale factor, **k**, would map circle c onto circle d ?

   $$k = \frac{r1}{r2} =$$

2. **Describe the series of transformations that would map circle c onto circle d ?**
   Hint: Review this dynamic demonstration [Similar Circles Applet1]

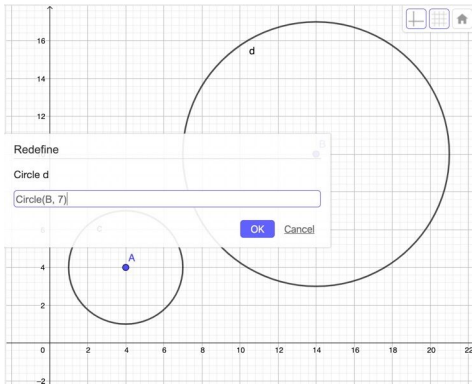
   _____

   _____

   _____

Are all circles similar?

1. Open Geogebra to view circle c and circle d. Double click on the outer edge of either circle to adjust the radius. You may type any value here to redefine the length of radius for both circles.

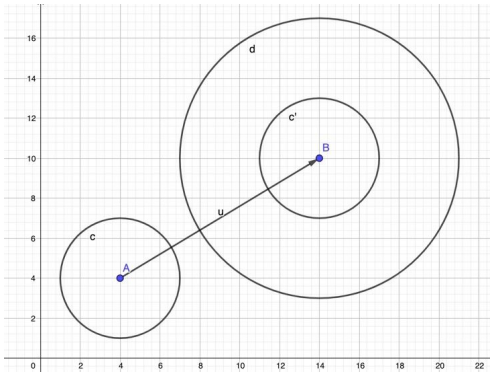


3. Determine the scale factor, k, that would map circle c onto circle d **k = _____**

4. Translate circle c onto circle d

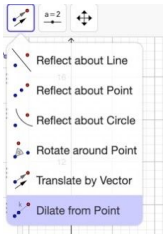
Click  then scroll down to click 

Select the edge of circle c (it should highlight darker), point A, and point B.



5. Now apply the scale factor to dilate the circle.

Click 

Scroll down then click 

dilate from point.
Select the edge of circle c' (it should highlight darker), point B, then type in the k value.

6. Animate the steps to insure the preimage and image created are similar, then watch *Similar Circles Applet2.*

   What do you conclude about any two circles?

   _____

   _____

7. If you created two cylinders from your two circles with the same height would those cylinders be similar? How would you show that two cylinders are similar?

8. Could you apply this same reasoning to any other figures or solids are similar? Hint: Look at this applet to compare cylinders

Extension

Are all cylinders with the same height similar?

Hint: See Cylinder Applet

Toilet Paper Brand	Length of one rectangle sheet	Height of roll (inches)	#of sheets	Circumference of roll	Radius	
Charmin		4.0				$\frac{r1}{r3} =$
Scott	4.0	4.0	1210			$\frac{r1}{r2} =$
Greater Value	3.7	4.0	1000			$\frac{r2}{r3} =$

Length of sheet ~ perpendicular height of roll