Geometry (G.C.1, 2)
Unit Five: Circle Introduction (HW0)

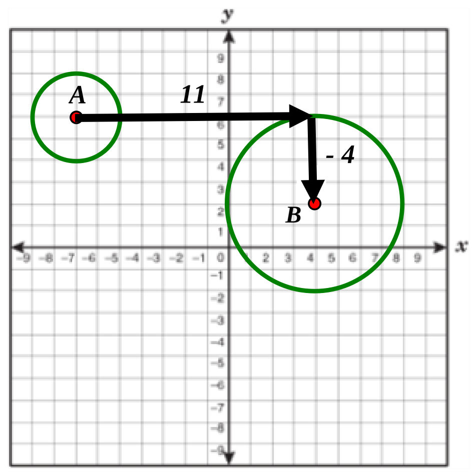
Name: ___________________________
Date: ____________ Period: ________

All circles are similar to one another because one circle can always be mapped onto another by a translation vector and a dilation. Below is an example of how to complete these transformations.

Map Circle A to Circle B

<u>Translation Vector:</u> To find this, start at the preimage circle's center and create a path to the image circle's center.
(Look at the arrows to the right.)

The center needs to move 11 right and 4 down. → $\boxed{T_{<11,-4>}}$



<u>Scale Factor:</u> To find this, compare the preimage circle's radius to the image circle's radius. Determine what multiplier will transform the preimage radius length into the image radius length.

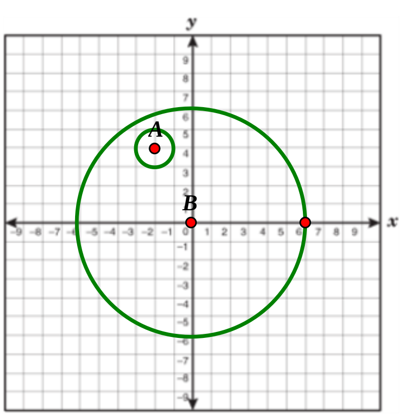
Preimage Radius (Circle A) = 2   Image Radius (Circle B) = 4

The preimage radius must be multiplies by 2 to equal this image radius, so the scale factor should be 2.

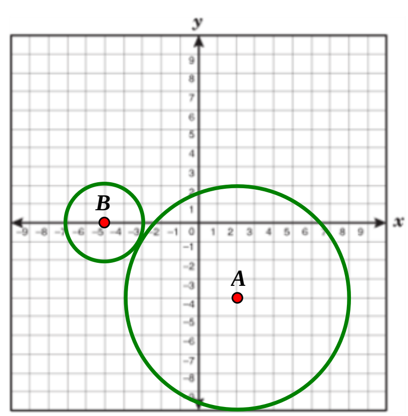
<u>Your Turn:</u>

1. Look at the description below each graph and describe the transformations that map the preimage to the image. The transformation will involve a translation and a dilation/scale factor.

a)



b)



Circle B to Circle A	Circle A to Circle B
Translation:	Translation:
Scale Factor:	Scale Factor:
ENLARGEMENT REDUCTION	ENLARGEMENT REDUCTION

2. Determine the translation that would map the center of circle A onto the center of circle B. If you need a quick graph to help you, use the space below each problem to sketch it out.

Circle A	Circle B
A (-3, -11)	B (4, 7)

Translation: ___________________

Circle A	Circle B
A (0, -8)	B (-3, 2)

Translation: ___________________

3. What scale factor would make circle A the same size as circle B?

Circle A	Circle B
Radius_A = 12 cm	Radius_B = 3 cm

Scale Factor: ___________________

Circle A	Circle B
Radius_A = 6 cm	Radius_B = 8 cm

Scale Factor: ___________________

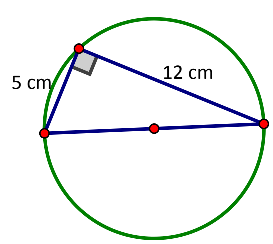
Using what you know about circles, find the requested information.

a) Area = 36π r = _________

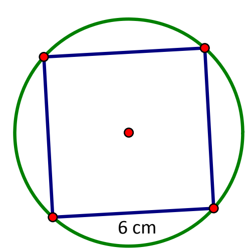
b) C = 10π r = _________

c) d = 7 cm r = _________

d) r = __________



e) r = __________ (E)



Square inscribed