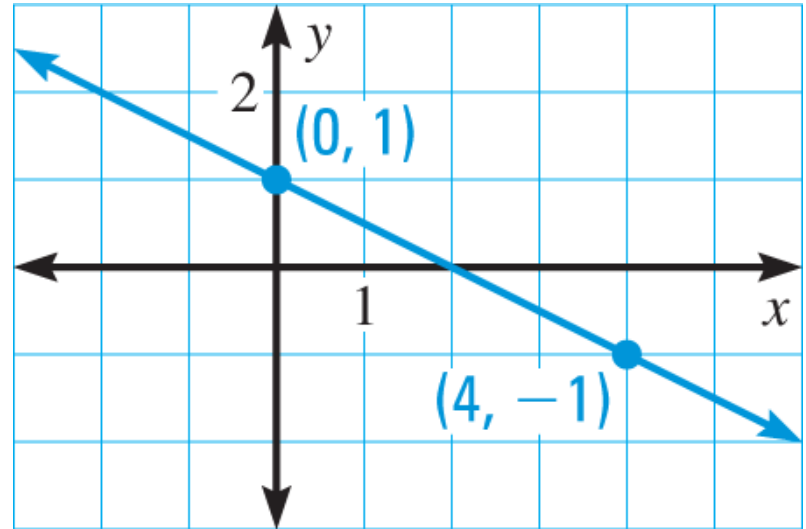


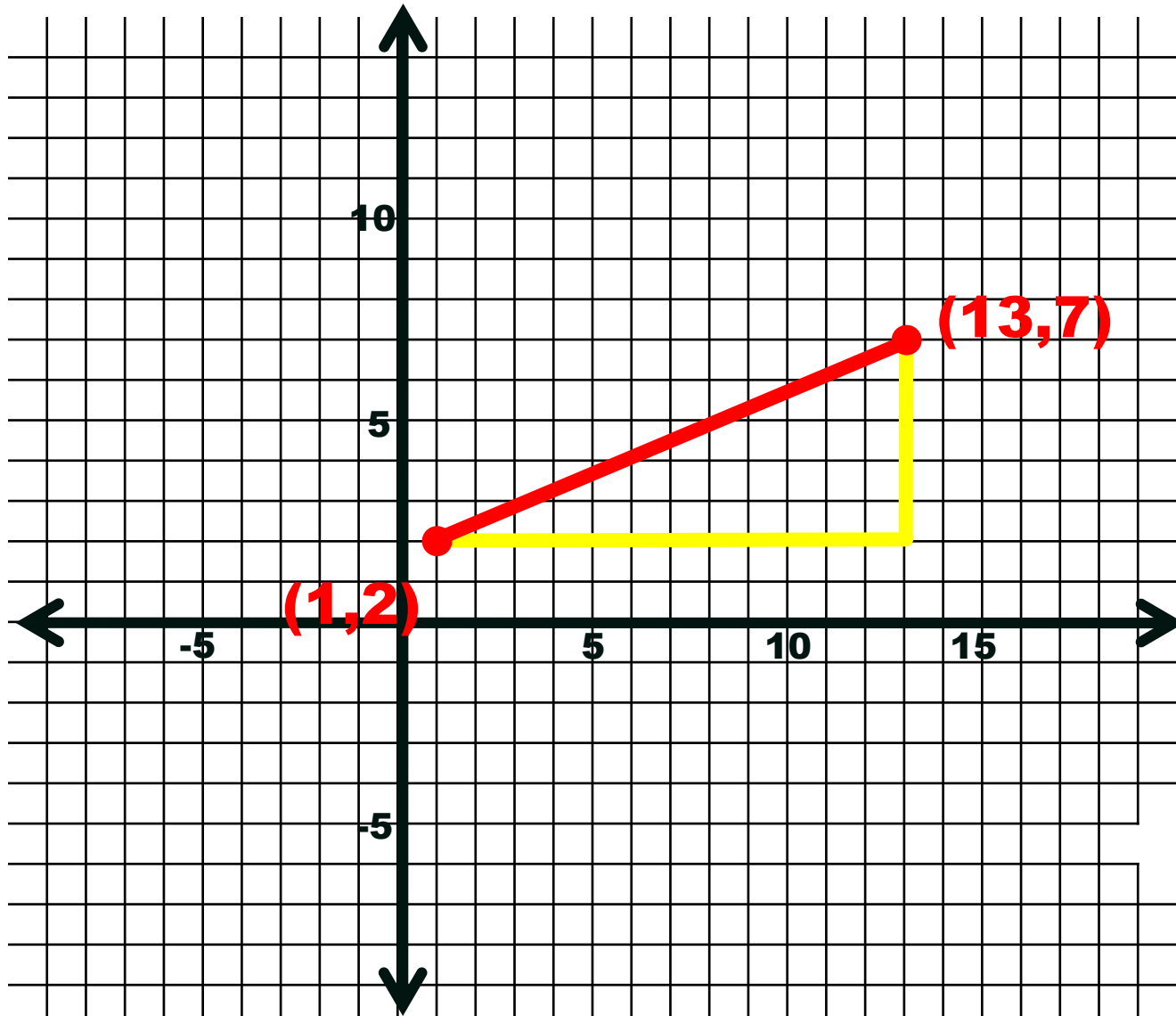
12.7

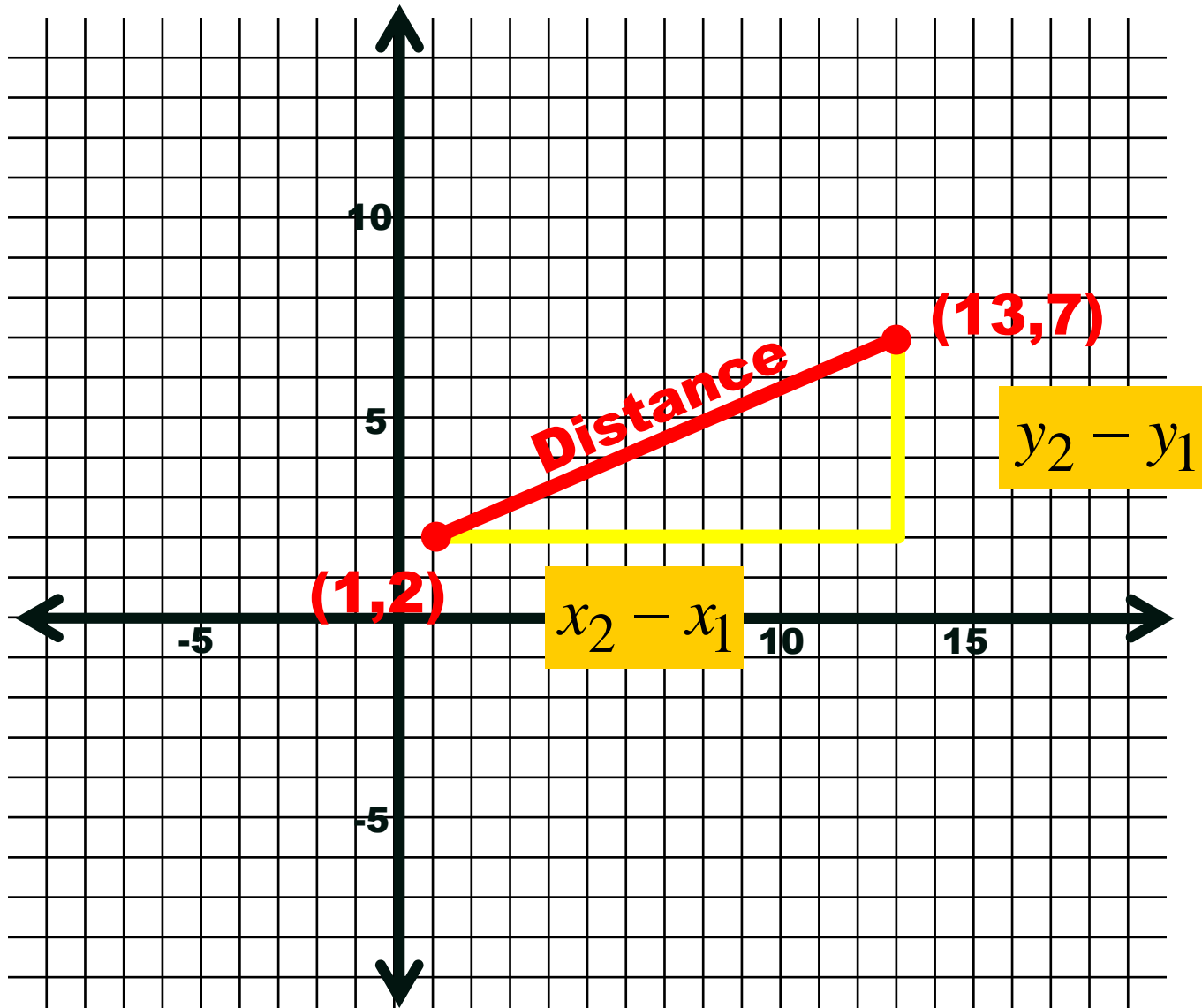
Equation of Circles

Review

- 1) Write an equation of the line shown.







$$(x_2 - x_1)^2 + (y_2 - y_1)^2 = \text{distance}^2$$

Observations...

Investigation 1 (Equation of Circles 1)

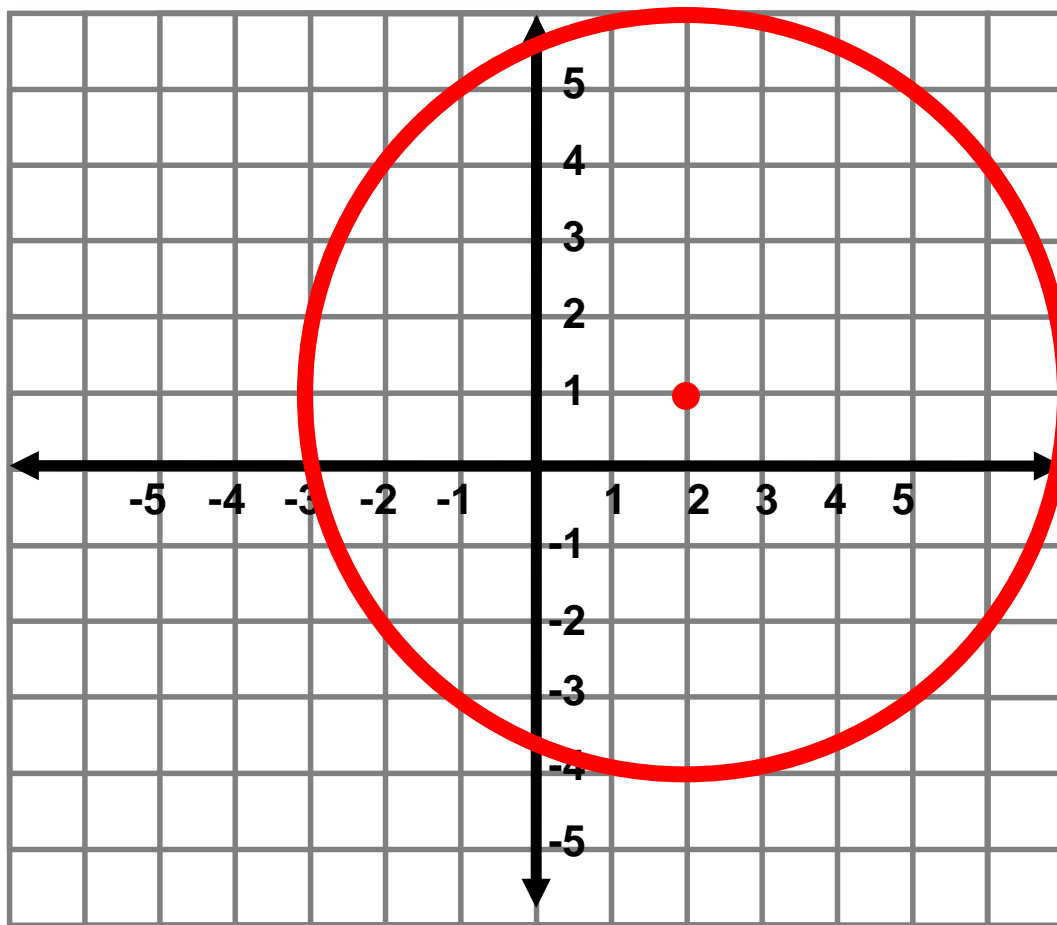
- 1) Make sure both boxes are checked on the top-left hand side
- 2) From the figure formed, what do the green and red line segments represent?
- 3) What does \overline{AB} represent in that figure?
- 4) How does the equation at the top relate to \overline{AB} ?
- 5) Write the original equation:
- 6) What does x and y represent?

Observations...

7) What do the other numbers in the parenthesis represent?

8) What does the number 25 represent?

EQUATION OF A CIRCLE

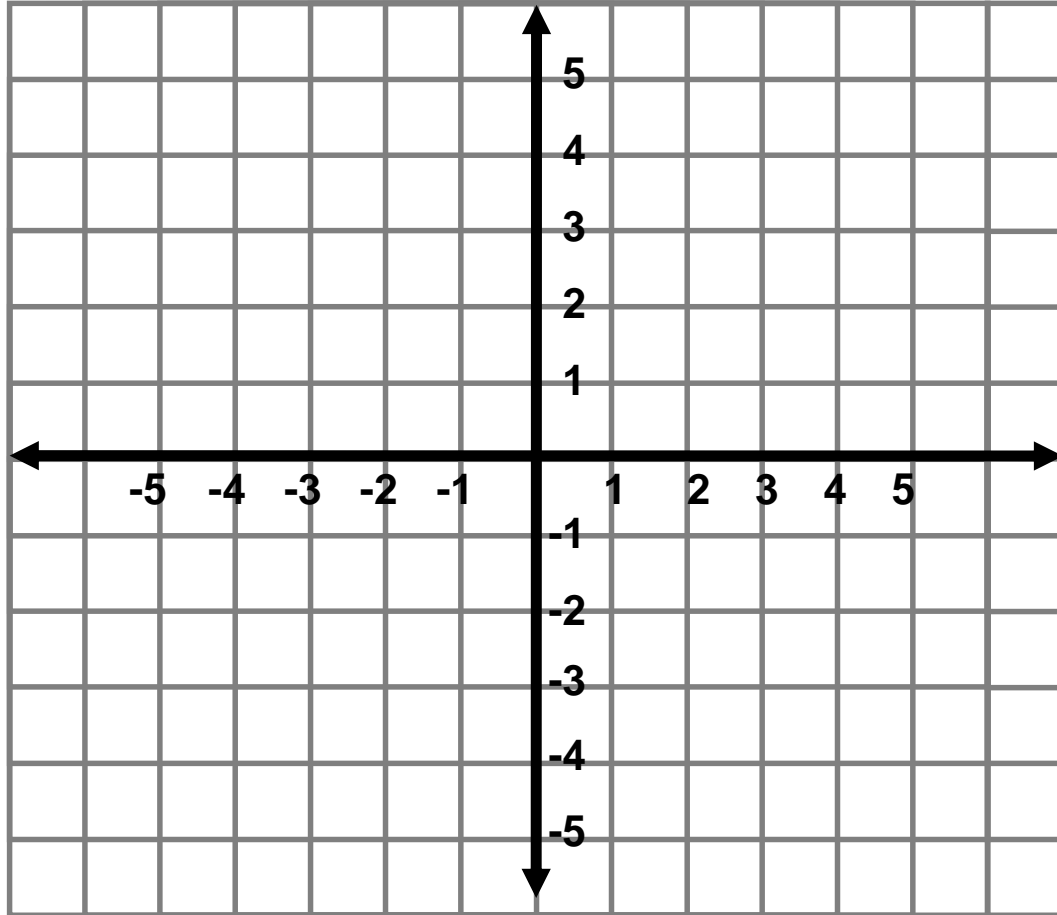


$$(x - 2)^2 + (y - 1)^2 = 25$$

Equation of a circle

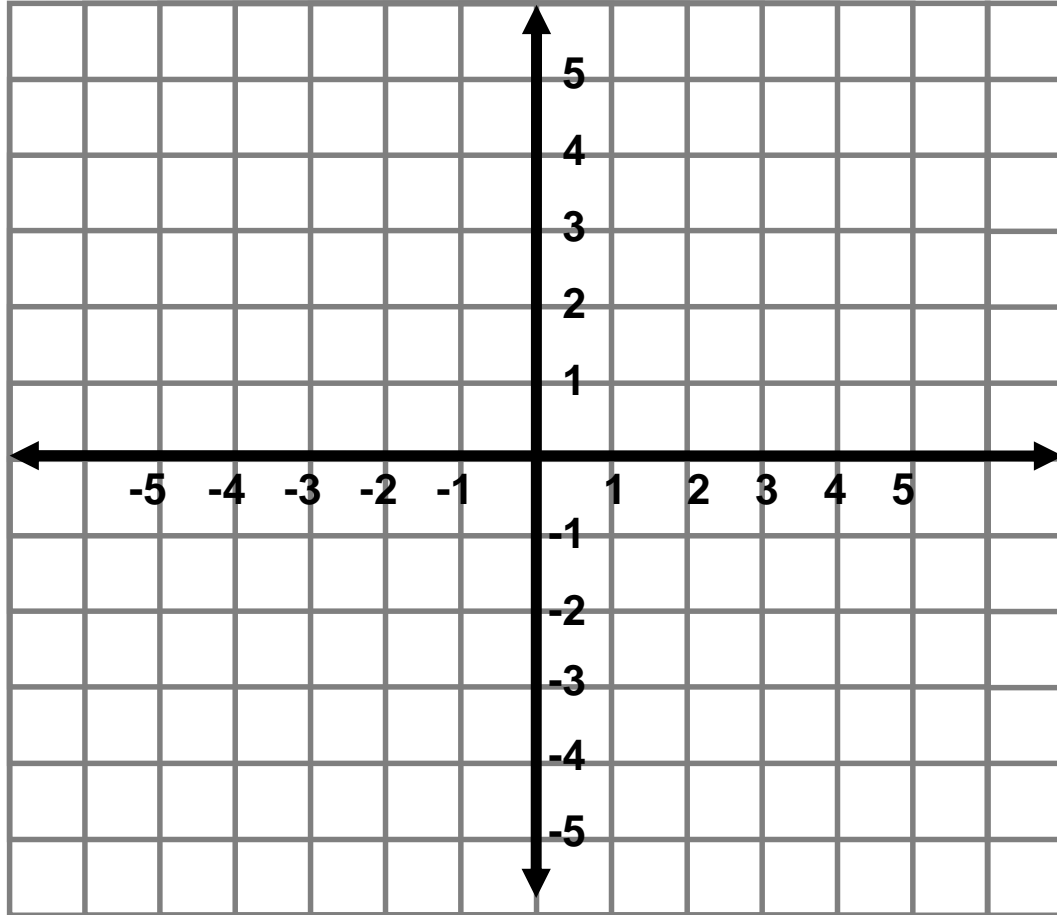
- (h,k) is the center of the circle
- r is the radius

GRAPHING A CIRCLE



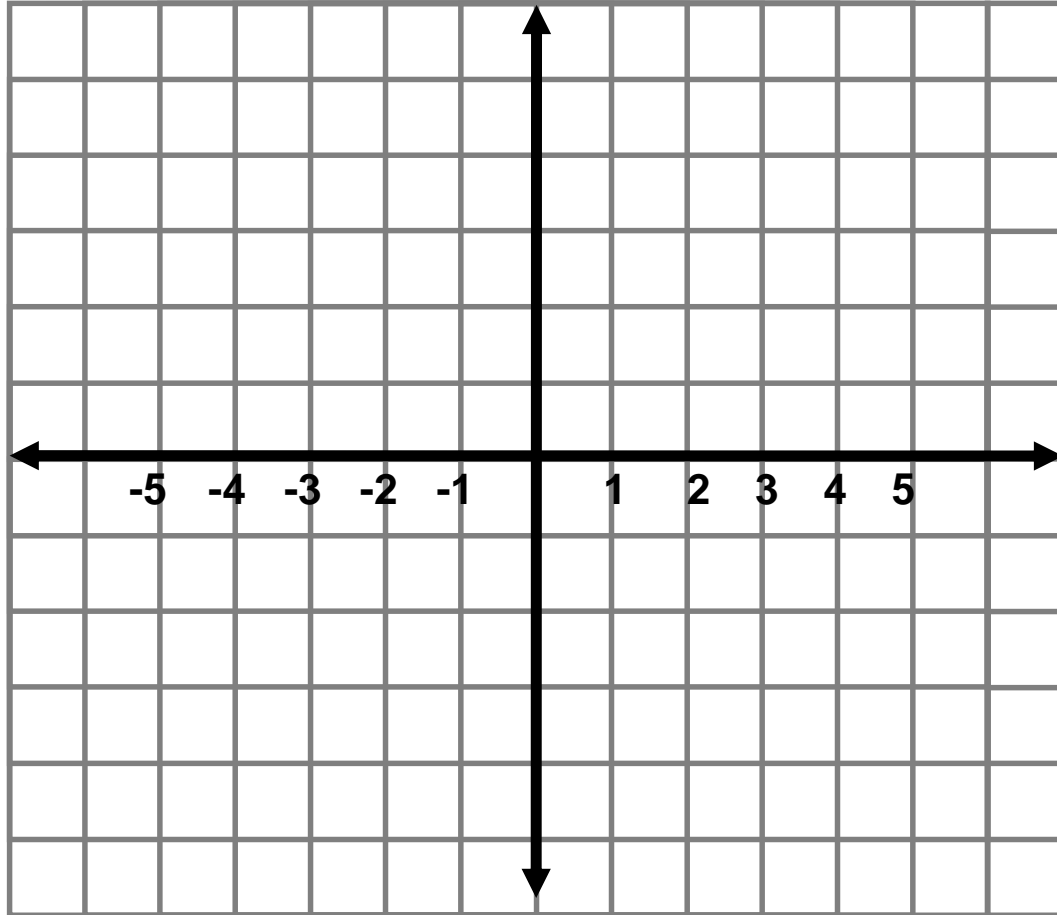
$$(x - 3)^2 + (y - 2)^2 = 4$$

GRAPHING A CIRCLE



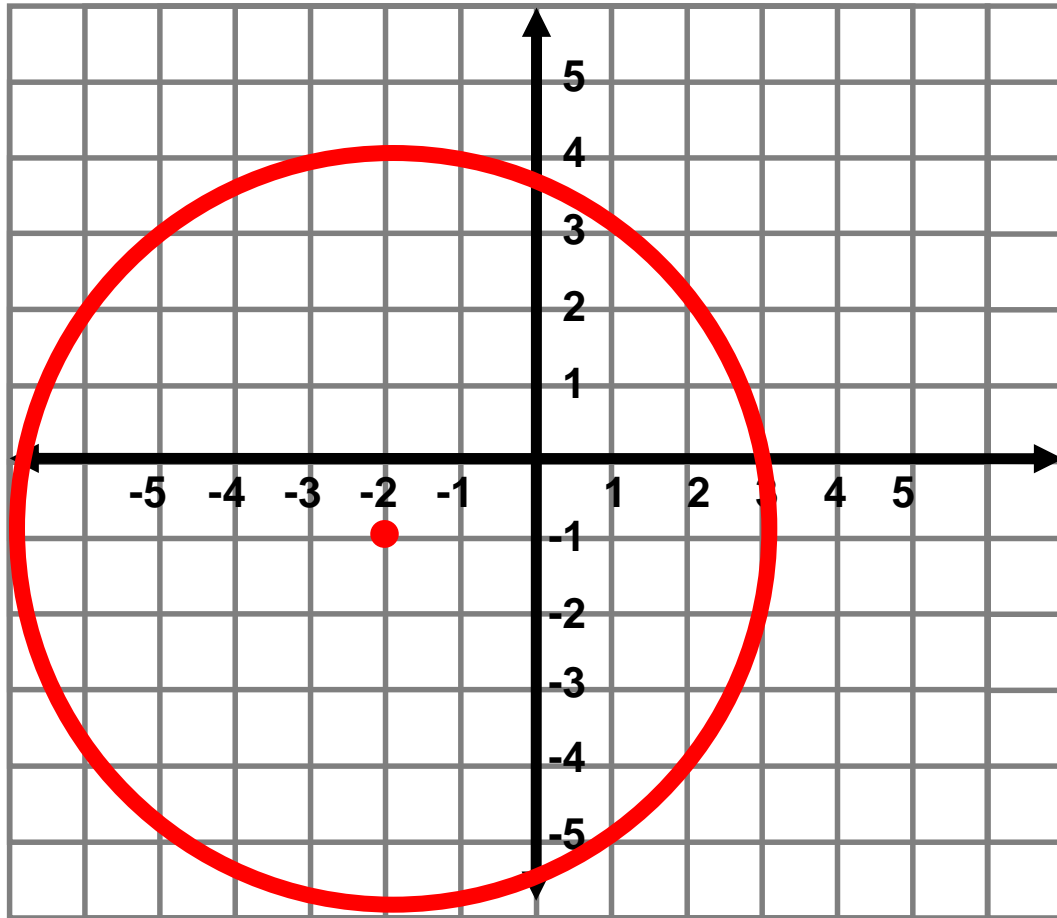
$$x^2 + y^2 = 16$$

GRAPHING A CIRCLE

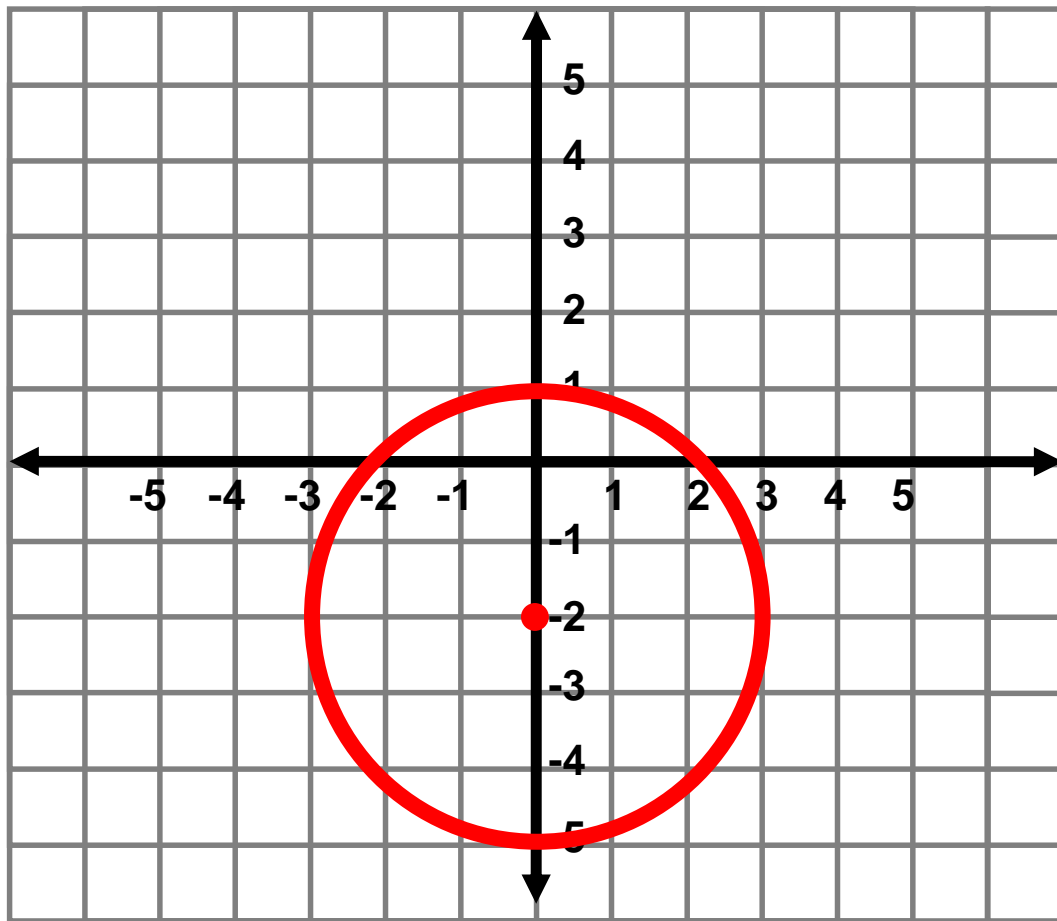


$$(x + 2)^2 + (y - 3)^2 = 9$$

DETERMINING THE EQUATION OF A CIRCLE



DETERMINING THE EQUATION OF A CIRCLE

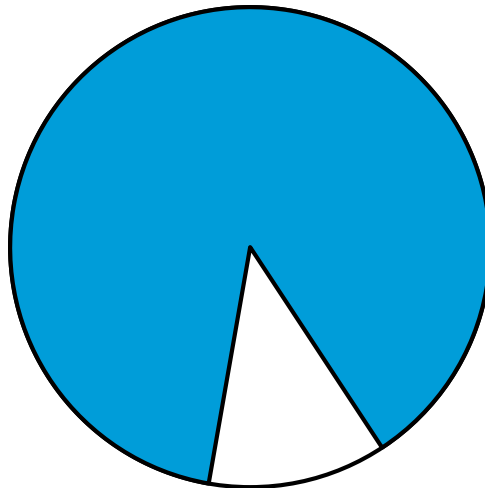
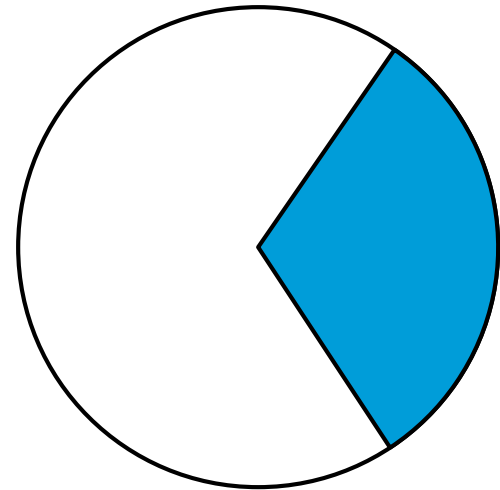
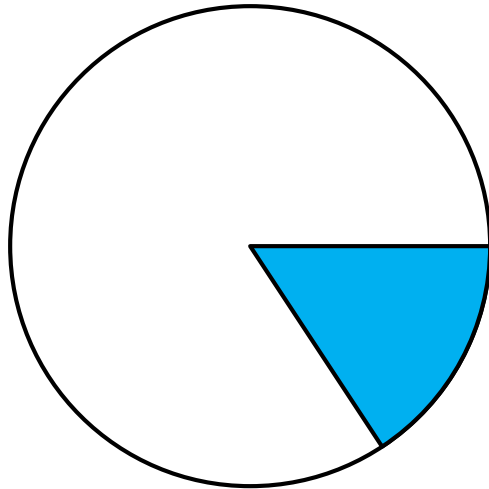


12.75

**Areas of
Parts of a Circle**

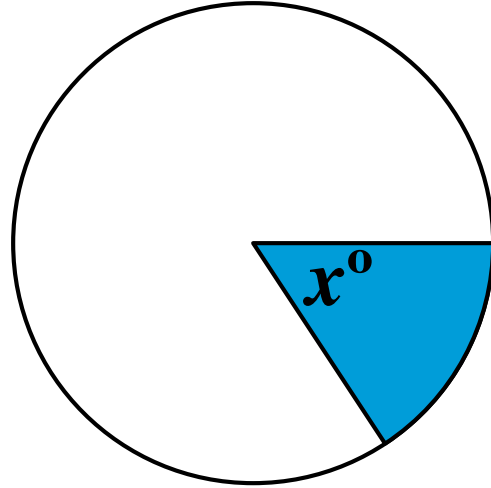
Parts of a Circle

SECTOR OF A CIRCLE



Parts of a Circle

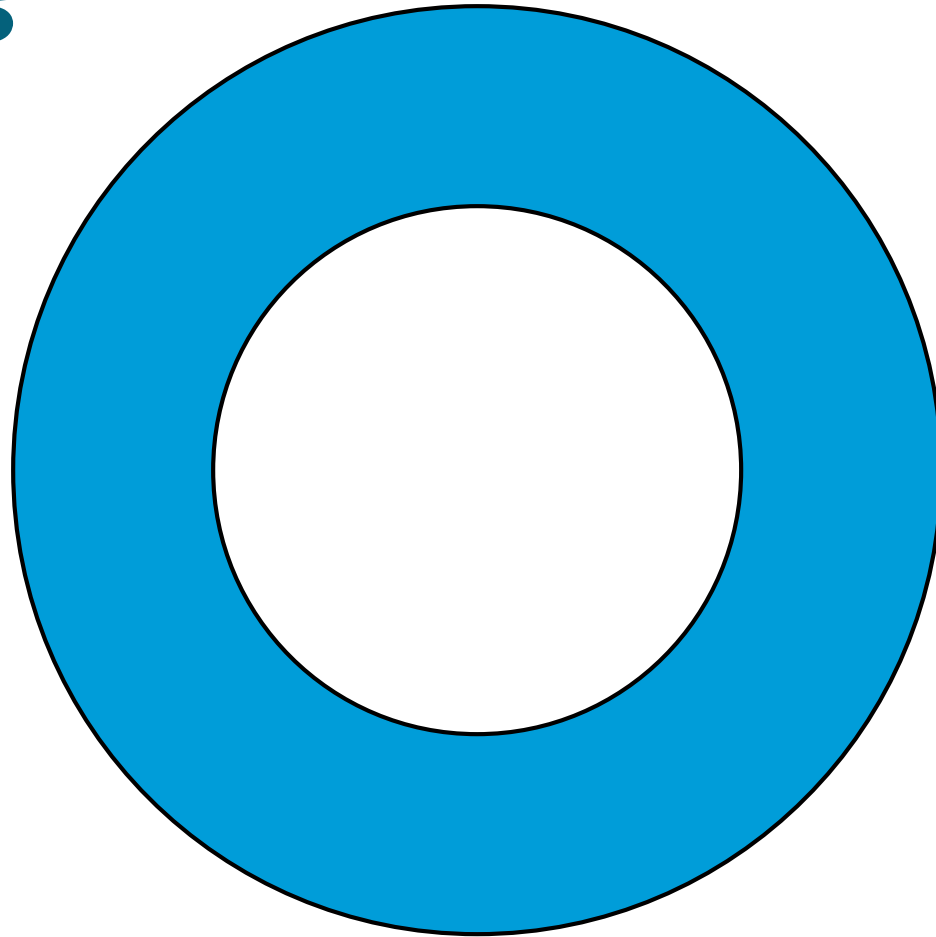
AREA OF A SECTOR OF A CIRCLE



***Area of a
Sector =***

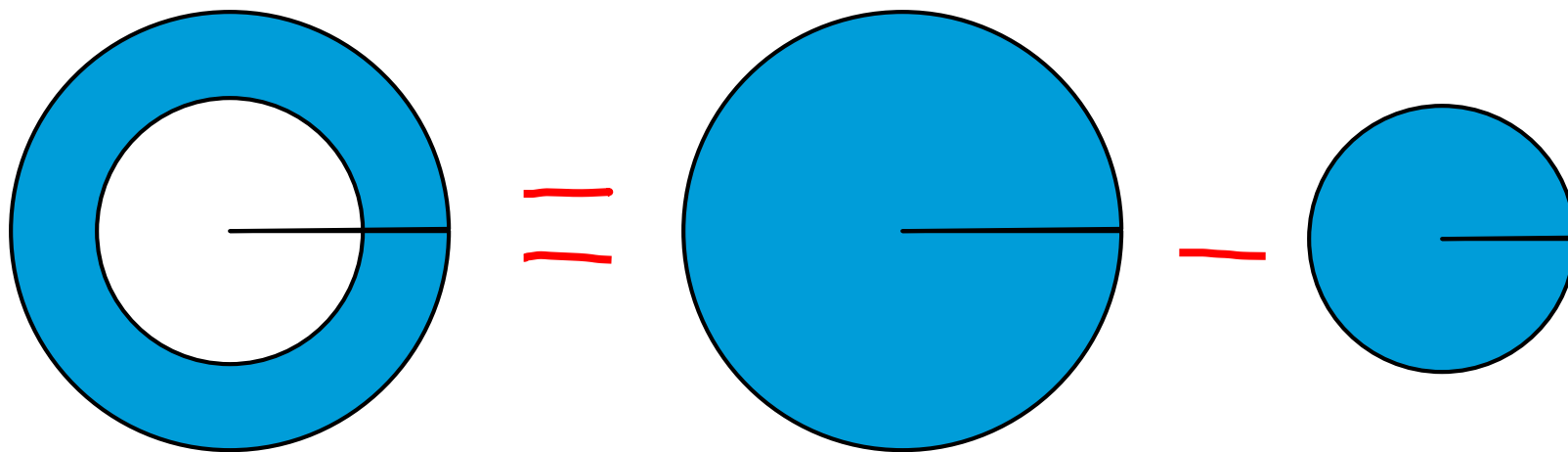
Parts of a Circle

Annulus



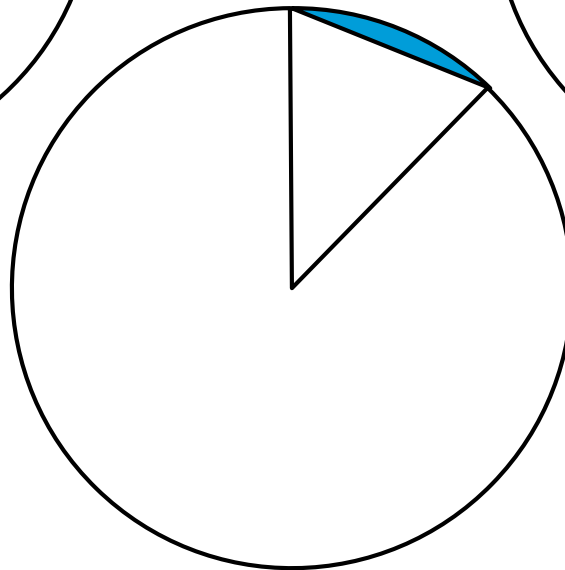
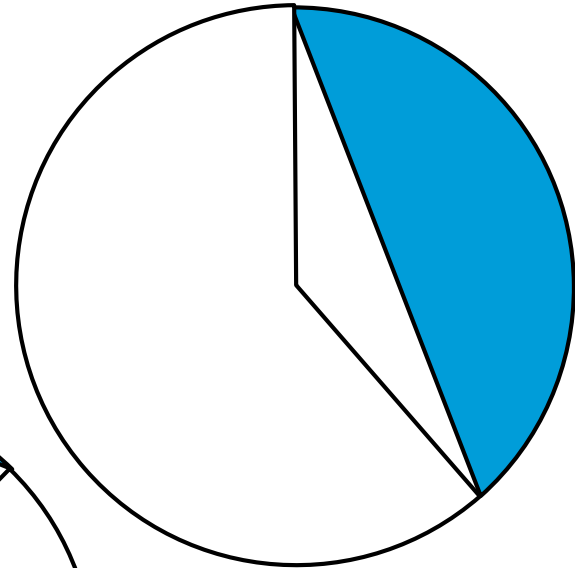
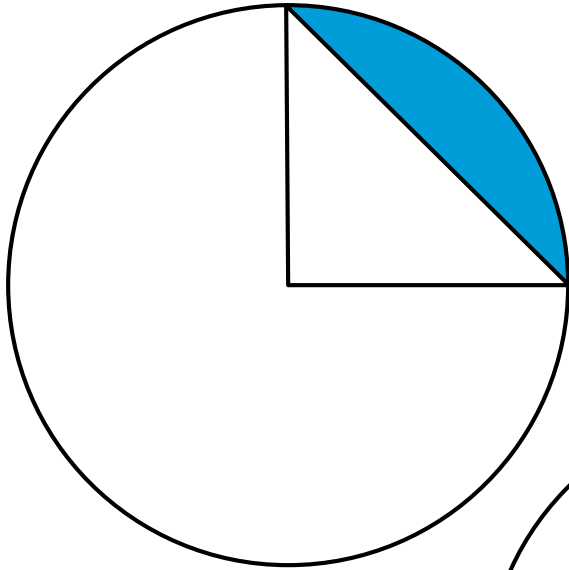
Parts of a Circle

Area of an Annulus



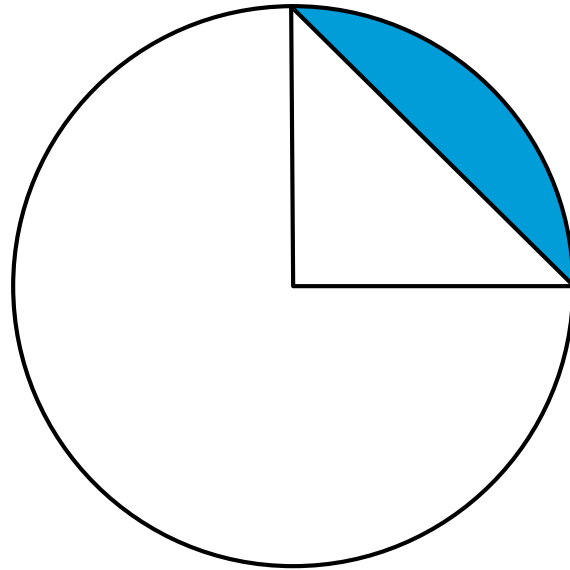
Parts of a Circle

Segment



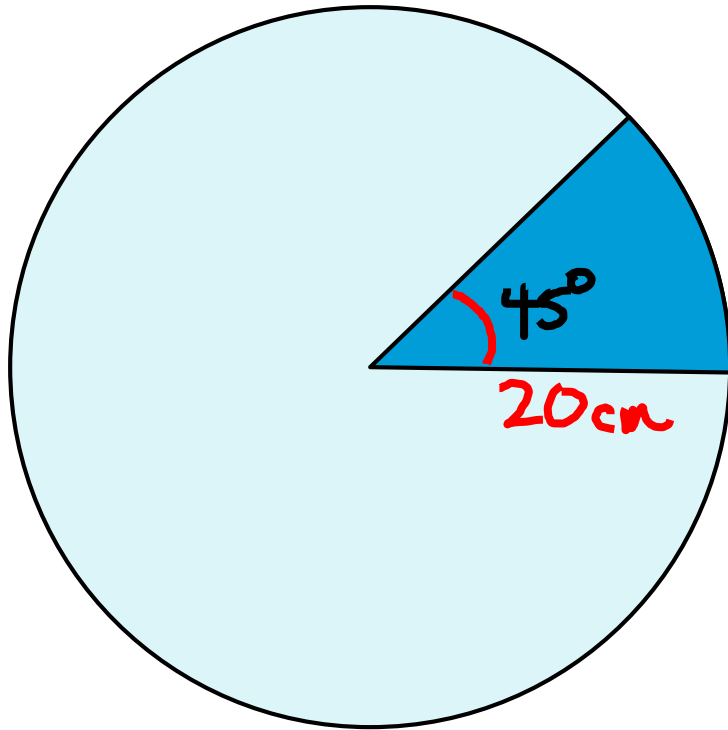
Parts of a Circle

Area of a Segment



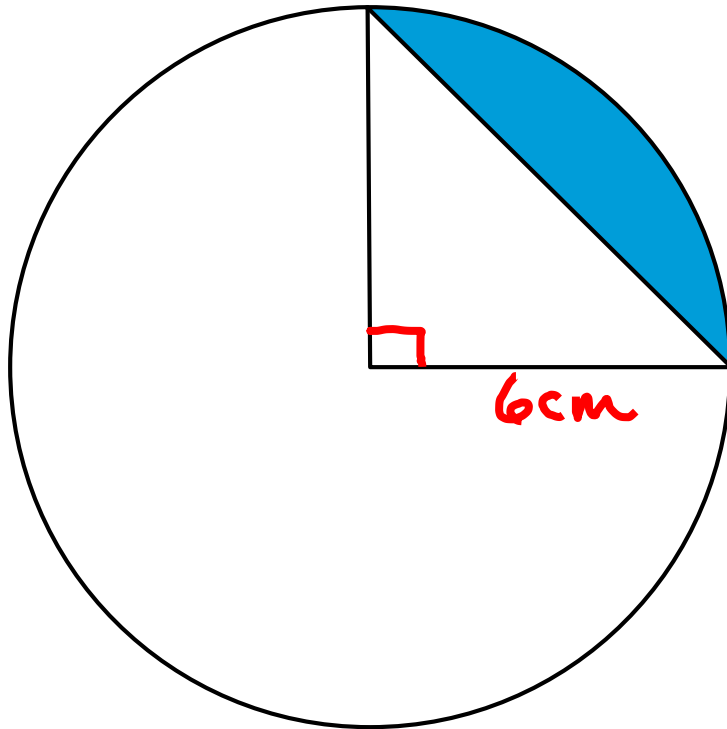
PRACTICE

Example 1



PRACTICE

Example 2



PRACTICE

Example 3

$$\text{Sector Area} = 14\pi \text{ cm}^2$$

