What's Going On?

Checking In   F.F.M.

Minds on   What's the Equation?

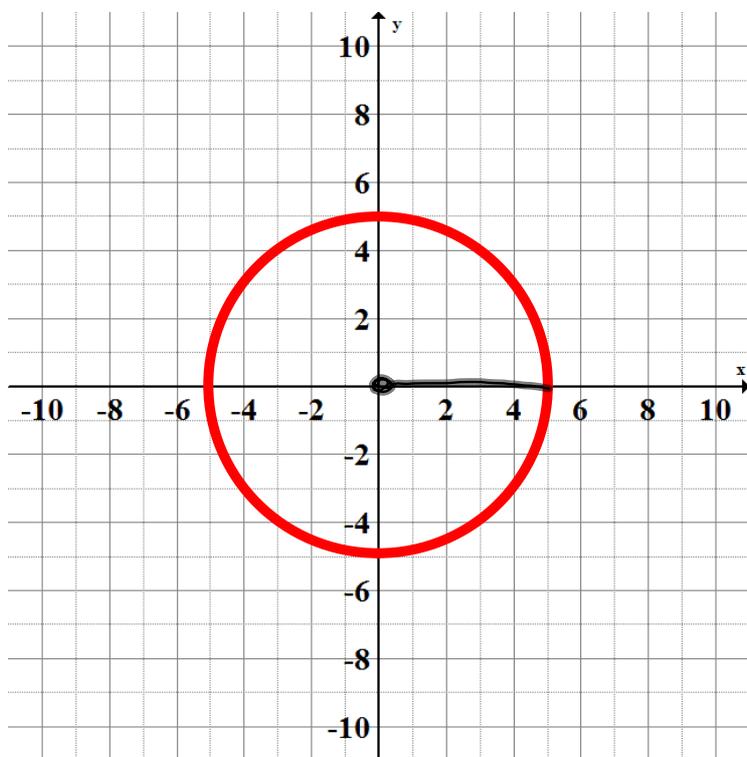**Action!**   Midpoints

Consolidation   Partner Switch

Learning Goal - I will be able to determine the midpoints of line segments.

Minds on

What's the Equation?

$$x^2 + y^2 = r^2$$

$$x^2 + y^2 = 25$$

Minds on

What's the Equation?
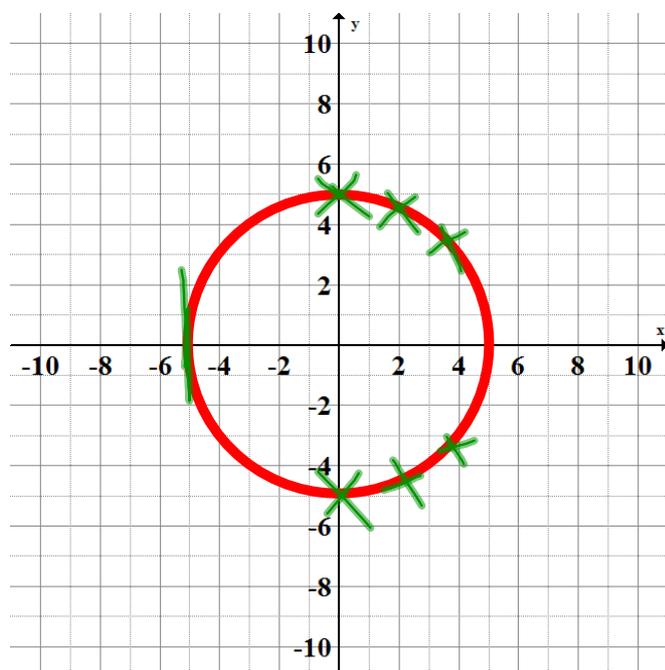
$$x^2 + y^2 = 25$$

Equations give us a way to relate x and y (so far).

Typically we see equations with only y on the left hand side.

Let's do that for the equation of our circle.

Minds on

What's the Equation?

$$x^2 + y^2 = 25$$

$$-x^2 \qquad -x^2$$

$$y^2 = 25 - x^2$$

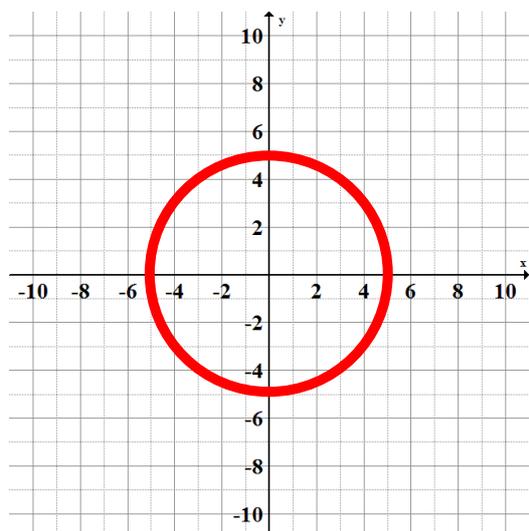$$y = \sqrt{25 - x^2}$$

when $x = 0$

$$y = \sqrt{25}$$

$$y = \pm 5$$

Minds on

What's the Equation?

$$y = \sqrt{25 - x^2}$$

When is our circle "not defined"?

$$y = \sqrt{25 - x^2}$$
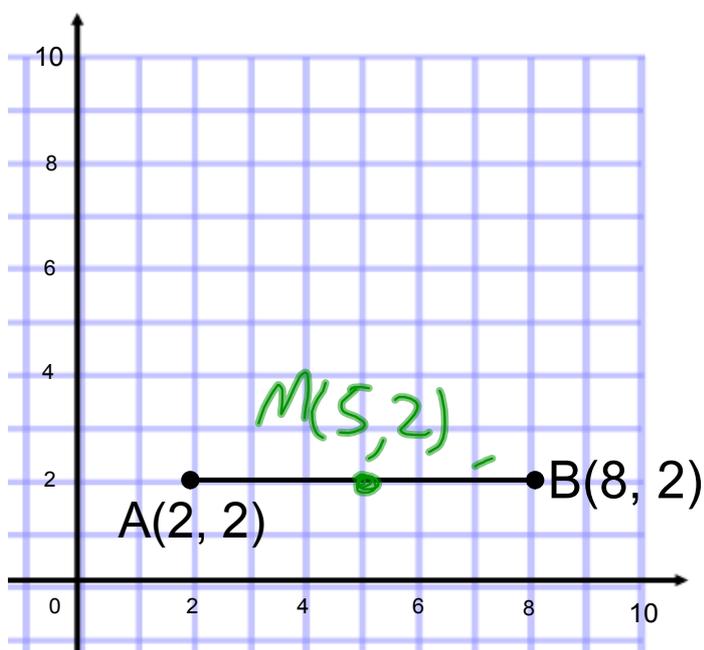
$$\text{When } x = 8$$

$$y = \sqrt{25 - 8^2}$$

$$y = \sqrt{25 - 64}$$

$$y = \sqrt{-39}$$

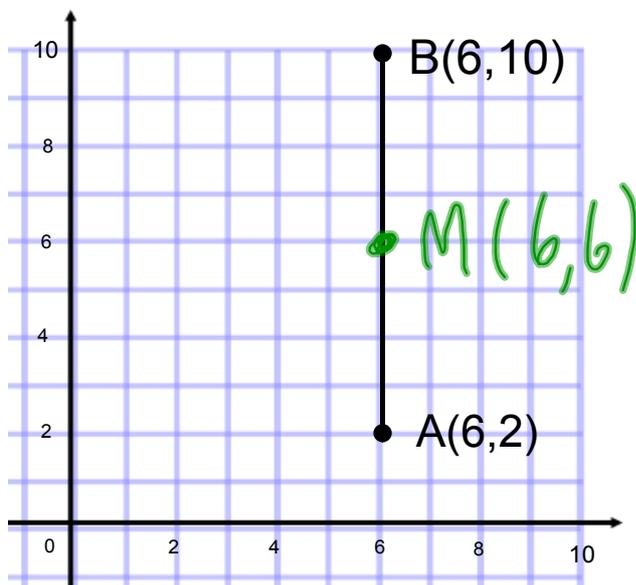Our circle is not defined when x > 5 and when x < -5
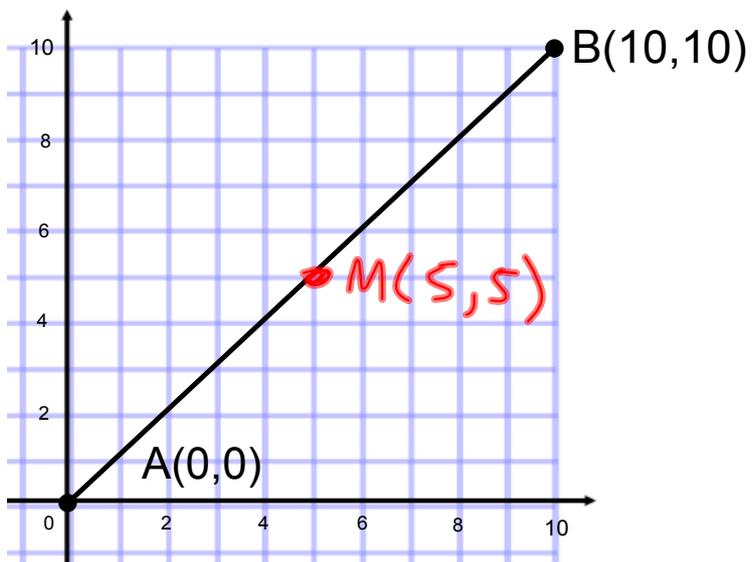
Action!

What's the Midpoint?

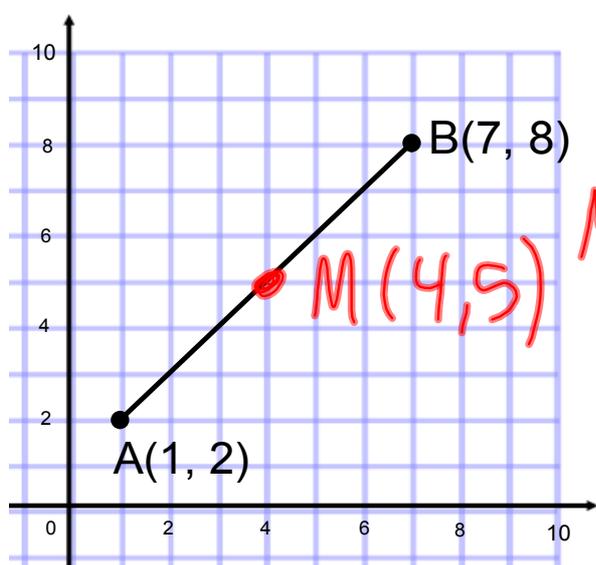## Action!

What's the Midpoint?

Action!

What's the Midpoint?

Action!

What's the Midpoint?

Midpoint of a Line Segment

$$M = \left(\frac{X_1 + X_2}{2} , \frac{Y_1 + Y_2}{2} \right)$$

B(7, 8)

M(4, 5)

A(1, 2)

Consolidation

Find the midpoint of PQ,
where P(1, 7) and Q(5, 9)...

$M = (3, 8)$

Midpoint of GH

$G(-1, -3)$, $H(-6, 8)$

$M = (-3.5, 2.5)$

Consolidation

Homework

Pg. 77

1-5, 8, 17, 23