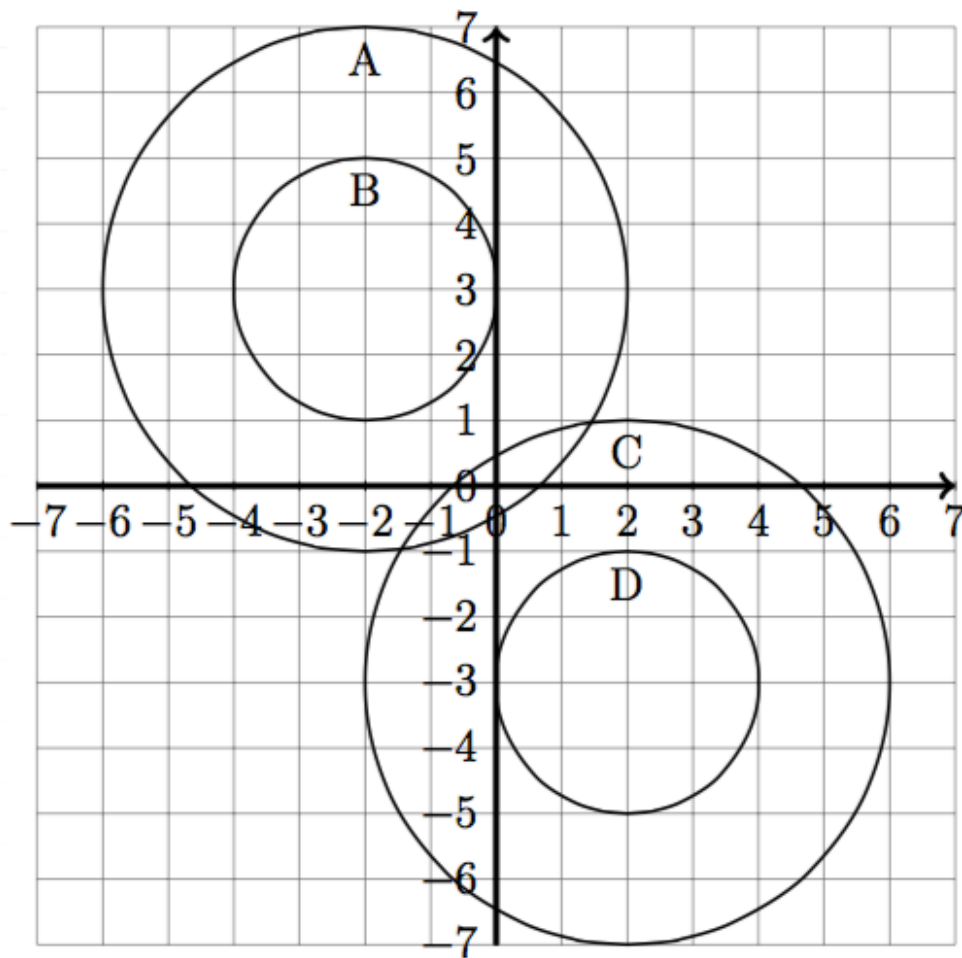


Topic: Graphing circles

Question: Which circle is the graph of $(x - 2)^2 + (y + 3)^2 = 4$?



Answer choices:

A A

B B

C C

D D



Solution: D

Given

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

we can put this in the form $(x - h)^2 + (y - k)^2 = r^2$ by rewriting it.

$$(x - 2)^2 + [y - (-3)]^2 = 2^2$$

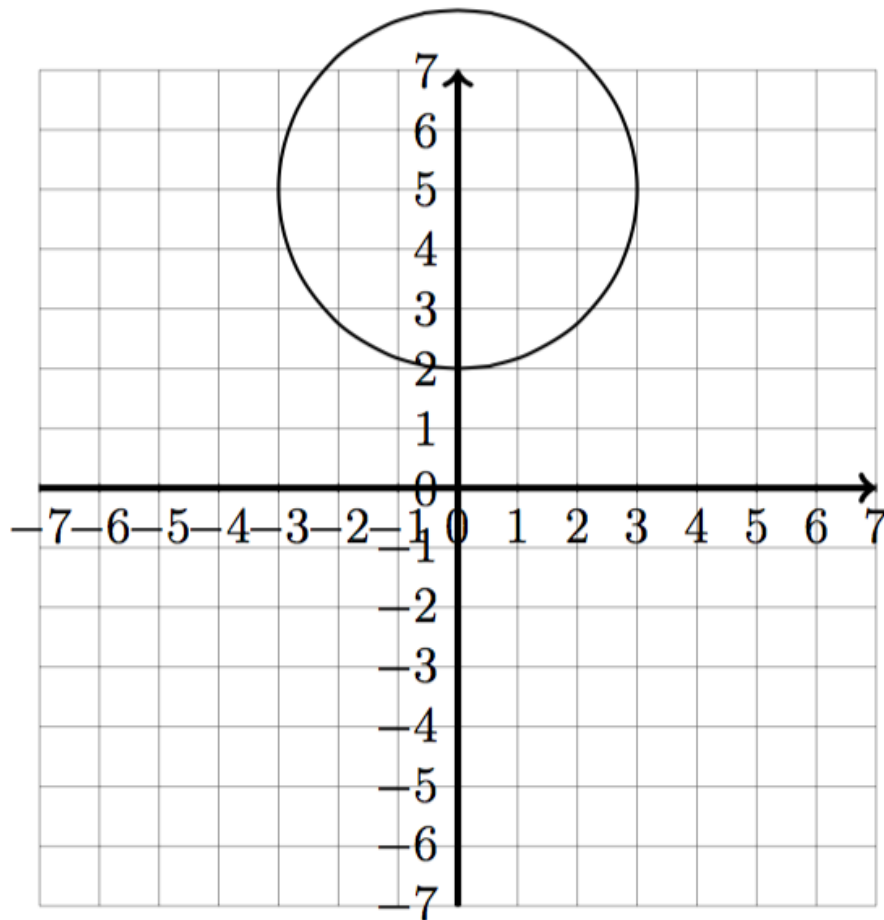
We can see that $h = 2$, $k = -3$, and $r = 2$.

The circle with center $(2, -3)$ and radius 2 is D.



Topic: Graphing circles

Question: What is the equation of the given circle?



Answer choices:

- A $x^2 - 10x + y^2 + 16 = 0$
- B $x^2 + y^2 + 10y + 16 = 0$
- C $x^2 + y^2 - 10y + 16 = 0$
- D $x^2 + 10x + y^2 + 16 = 0$



Solution: C

The given circle has a center at $(0,5)$ and a radius of 3. That tells us that $h = 0$, $k = 5$, and $r = 3$.

Substitute those values into $(x - k)^2 + (y - k)^2 = r^2$, then expand and simplify.

$$(x - 0)^2 + (y - 5)^2 = 3^2$$

$$x^2 + y^2 - 10y + 25 = 9$$

$$x^2 + y^2 - 10y + 16 = 0$$

This matches answer choice C.

