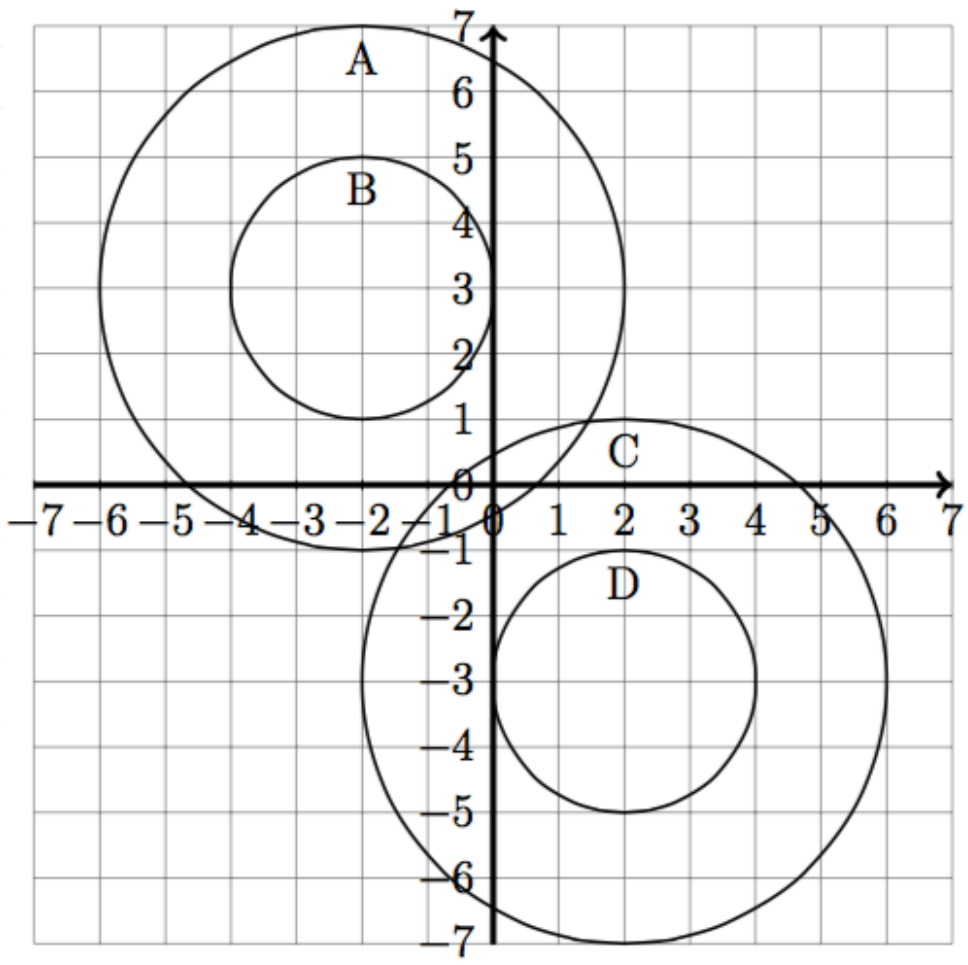
Topic: Graphing circles

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.

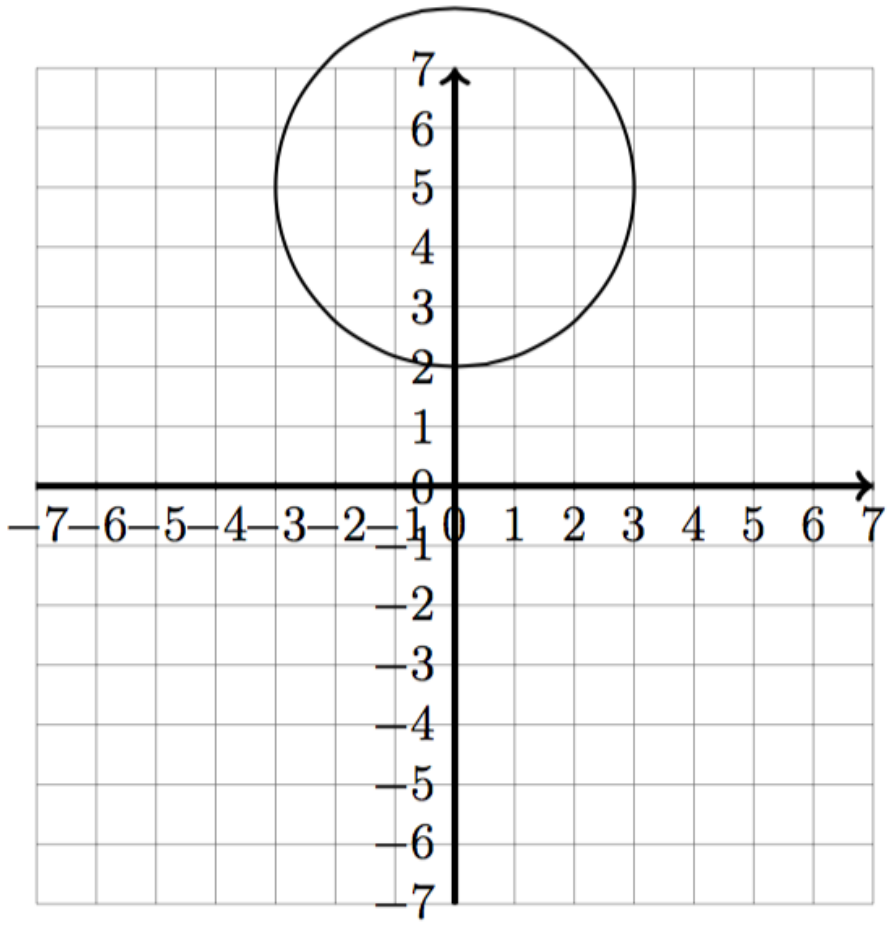
$$(x-2)^2+\left[y-(-3)\right]^2=2^2$$

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.