Now try these ☺

1. Write the center and radius for each equation:

a. $(x+3)^2 + (y+5)^2 = 81$ $r = \sqrt{81} = 9$

b. $x^2 + y^2 = 900$ $(x-0)^2 + (y-0)^2 = 900$ $r = \sqrt{900}$

c. $(x-6)^2 + (y+30)^2 = 8$ $r = \sqrt{8} = \sqrt{4 \cdot 2}$

d. $(x-16)^2 + (y+36)^2 = 52$ $r = \sqrt{52} = \sqrt{4 \cdot 13}$

center	radius
$(-3,-5)$	9
$(0,0)$	30
$(6,-30)$	$2\sqrt{2}$
$(16,-36)$	$2\sqrt{13}$

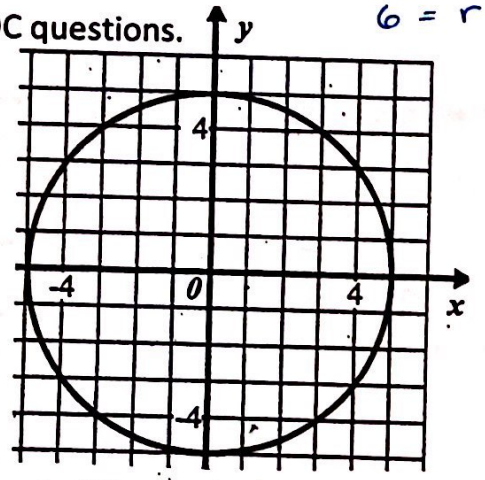
2. Write the equation of a circle with area 36π and center (4, -7)

$A = \pi r^2$
$36\pi = \pi r^2$
$36 = r^2$
$6 = r$

$(x-4)^2 + (y+7)^2 = 36$

Now try the EOC questions.

3.



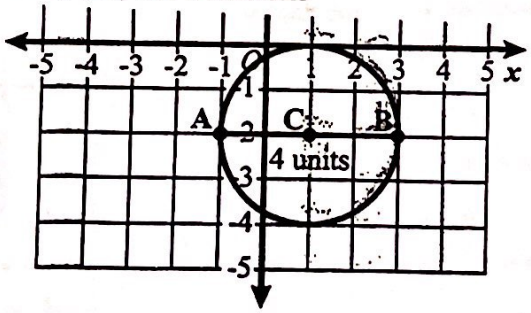
What is the equation for this circle?

center (0,0)
$r = 5$

A. $x^2 + y^2 = 25$
B. $x^2 + y^2 = 100$
C. $(x-5)^2 + (y-5)^2 = 25$
D. $(x-10)^2 + (y-10)^2 = 100$

4.

A circle with center C(1, -2) has a diameter of 4 units.

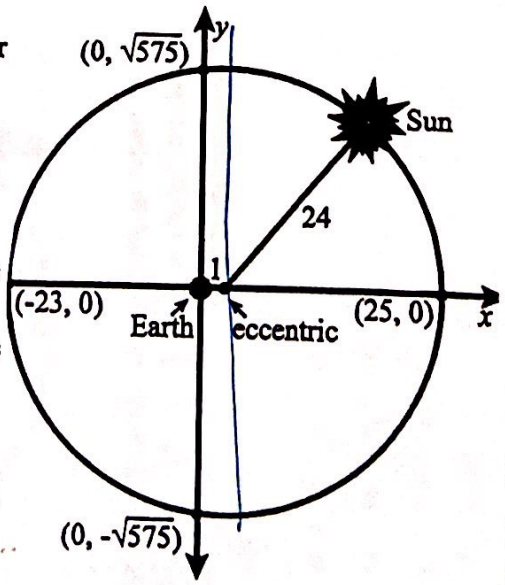


Which one of the following equations describes the circle?

center (1, -2)
$r = 2$

A. $(x+3)^2 + (y-2)^2 = 4$
B. $(x-4)^2 + (y+4)^2 = 4$
C. $x^2 + (y+1)^2 = 4$
D. $(x-1)^2 + (y+2)^2 = 4$

5. Hipparchus was an ancient Greek astronomer who lived in the 2nd century BCE. He thought that the Sun moved with constant speed on a circular path around Earth, while Earth stayed in one place. However, to account for his observations he realized that Earth could not be located at the center of the Sun's circular orbit. He named the point that was the center of the orbit the "eccentric." He also estimated that if the distance from Earth to the eccentric was 1 unit, then the radius of the Sun's orbit about the eccentric was 24 units. Assume Earth, the eccentric, and the circular orbit all lie in a plane.



Which of the following equations could describe the orbit of the Sun using Cartesian coordinates where the location of Earth has coordinates (0, 0)?

move new center to (-1, 0)

A. $(x+1)^2 + y^2 = 25$
B. $(x-1)^2 + y^2 = 24^2$
C. $(x-24)^2 + y^2 = 1$
D. $x^2 + y^2 = 24^2$