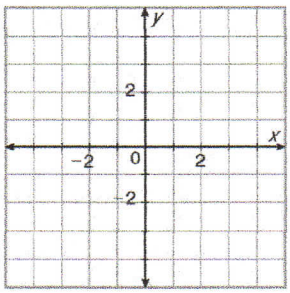
Equation of a Circle

Write the equation of each circle.

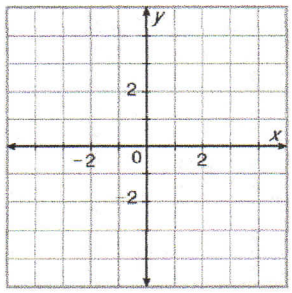
1. Circle X centered at the origin with radius 10 _____
2. Circle R with center $R(-1, 8)$ and radius 5 _____
3. Circle P with center $P(-5, -5)$ and radius $2\sqrt{5}$ _____
4. Circle O centered at the origin that passes through $(9, -2)$ _____
5. Circle B with center $B(0, -2)$ that passes through $(-6, 0)$ _____

Graph each equation.

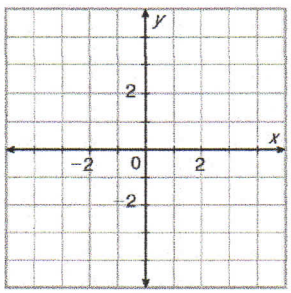
6. $x^2 + y^2 = 25$



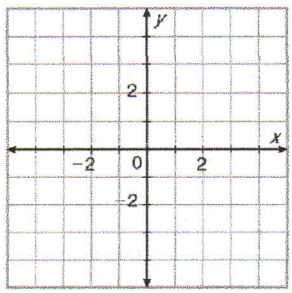
7. $(x + 2)^2 + (y - 1)^2 = 4$



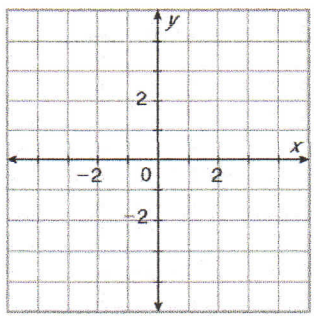
8. $x^2 + (y + 3)^2 = 1$



9. $(x - 1)^2 + (y - 1)^2 = 16$



Crater Lake in Oregon is a roughly circular lake. The lake basin formed about 7000 years ago when the top of a volcano exploded in an immense explosion. Hillman Peak, Garfield Peak, and Cloudcap are three mountain peaks on the rim of the lake. The peaks are located in a coordinate plane at $H(-4, 1)$, $G(-2, -3)$, and $C(5, -2)$.



10. Find the coordinates of the center of the lake.

_____

11. Each unit of the coordinate plane represents $\frac{3}{5}$ mile.

    Find the diameter of the lake. _____