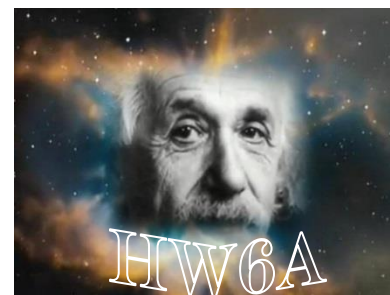


Name the center and radius for each equation given.

1) $x^2 + y^2 = 16$ 2) $(x - 2)^2 + (y - 7)^2 = 36$

3) $(x - 4)^2 + (y + 7)^2 = 7$ 4) $(x + 11)^2 + y^2 = 80$

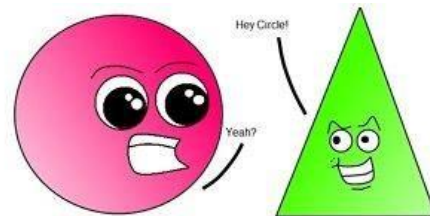


Write an equation for the circle described

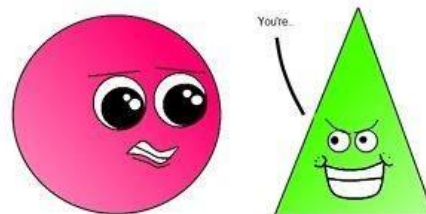
5) $C(4, 3), r = 2$ 6) $C(5, -6), r = 7$ 7) $C(-4, 9), r = 3$

8) $C(-4, 2), r = \sqrt{7}$ 9) $C(2, 3)$ and passes through $(5, 6)$. 10) $C(-5, 0)$ and passes through $(1, -2)$.

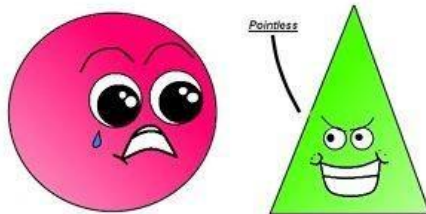
11) $(8, 0)$ and $(0, 6)$ are endpoints of the diameter.



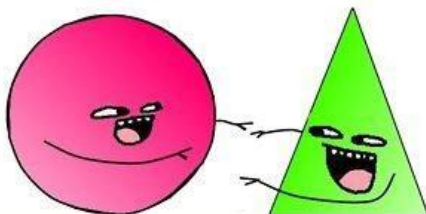
12) $C(5, -4)$, and the circle is tangent to the x-axis.



13) $C(-3, 1)$, and the circle is tangent to the line $x = 4$.



14) The circle is tangent to the x-axis at $(4, 0)$ and has y-intercepts of -2 and -8 .



15) The circle contains $(-2, 16)$ and has x-intercepts of -2 and -32 .

Write each equation in center-radius form. Give the center and radius.

16) $x^2 + y^2 - 2x - 8y + 16 = 0$

17) $y^2 + x^2 - 12y + 25 = 0$

18) $2x^2 + 2y^2 - 10x - 18y = 1$

19) $2x^2 + 2y^2 - 5x + y = 0$

Solve the system of equations to find the coordinates of any intersection points. If the graphs are tangent or do not intersect, say so.

20) $x + y = 23$
 $x^2 + y^2 = 289$

21) $2x - y = 7$
 $x^2 + y^2 = 7$

22) $x + 2y = 10$
 $x^2 + y^2 = 20$

23) $y = x\sqrt{3}$
 $x^2 + (y - 4)^2 = 16$

1) C(0, 0), r = 4	10) $(x + 5)^2 + y^2 = 40$	17) C(0.6), r = $\sqrt{11}$
2) C(2, 7), r = 6	11) $(x - 4)^2 + (y - 3)^2 = 25$	18) $(x - 5/2)^2 + (y - 9/2)^2 = 27$
3) C(4, -7), r = $\sqrt{7}$	12) $(x - 5)^2 + (y + 4)^2 = 16$	C(5/2, 9/2), r = $3\sqrt{3}$
4) C(-11, 0), r = $4\sqrt{5}$	13) $(x + 3)^2 + (y - 1)^2 = 49$	19) $(x - 5/4)^2 + (y + 1/4)^2 = 13/8$
5) $(x - 4)^2 + 9y - 3)^2 = 4$	14) $(x - 4)^2 + (y + 5)^2 = 25$	C(5/4, -1/4), r = $\sqrt{26}/4$
6) $(x - 5)^2 + (y + 6)^2 = 49$	15) $(x + 17)^2 + (y - 8)^2 = 289$	20) (8, 15) & (15, 8)
7) $(x + 4)^2 + (y + 9)^2 = 9$	16) $(x - 1)^2 + (y - 4)^2 = 1$	21) no intersection
8) $(x + 4)^2 + (y - 2)^2 = 7$	C(1, 4), r = 1	22) tangent at (2, 4)
9) $(x - 2)^2 + (y - 3)^2 = 18$	17) $x^2 + (y - 6)^2 = 11$	23) (0, 0) & $(2\sqrt{3}, 6)$