Circle Equations Problems

1. $(x-12)^2+(y-21)^2=64$

A circle in the xy-plane has the equation shown above. What is the radius of the circle? *(no calculator)*

   a. 8
   b. 12
   c. 21
   d. 64

2. A circle in the xy-plane has the equation $(x+13.4)^2+(y-8.2)^2=21.3$. Which of the following best describes the location of the center of the circle and its radius? *(no calculator)*

   a. Center: $(-13.4, 8.2)$; Radius: 21.3
   b. Center: $(-13.4, -8.2)$; Radius: $\sqrt{21.3}$
   c. Center: $(13.4, -8.2)$; Radius: $\sqrt{21.3}$
   d. Center: $(-13.4, 8.2)$; Radius: $\sqrt{21.3}$

3. A circle in the xy-plane has the equation: $1.5(x+4.4)^2+1.5(y-3.3)^2-15=0$. What is the radius of the circle? Round the answer to the nearest tenth. *(calculator)*

   a. 15
   b. 10
   c. 3.9
   d. 3.2

4. $(x-9)^2+(y+49)^2=25$

A circle in the xy-plane has the equation shown above. Which of the following correctly describes the location of the center of the circle and its radius? *(no calculator)*

   a. Center: $(9, -49)$; Radius: 25
   b. Center: $(3, -7)$; Radius: 5
   c. Center: $(9, -49)$; Radius: 5
   d. Center: $(3, -7)$; Radius: 25

5. A circle in the xy-plane has a center at $(16, -23)$and a radius 3. Which of the following is the equation of the circle? *(no calculator)*

   a. $(x+16)^2+(y-23)^2=3$
   b. $(x-16)^2+(y+23)^2=9$
   c. $(x-16)^2+(y+23)^2=3$
   d. $(x-16)+(y+23)=9$

6. Which of the following equations describes a circle with radius 6 that passes through the origin when graphed in the xy-plane. *(no calculator)*

   a. $(x-3)^2+(y+3)^2=6$
   b. $(x-3)^2+(y+3)^2=36$
   c. $(x-6)^2+(y+6)^2=36$
   d. $\left(x-3\sqrt{2}\right)^2+\left(y+3\sqrt{2}\right)^2=36$

7. The graph of $x^2-6x+y^2+4y-36=0$ in the xy-plane is a circle. What is the radius of the circle? *(no calculator)*

   a. 5
   b. 6
   c. 7
   d. 8

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

The graph of the equation above in the xy-plane is a circle. If the center of this circle is translated 3 units to the right, and the radius is increased by 1, which of the following is an equation of the resulting circle? *(no calculator)*

   a. $(x-3)^2+y^2=16$
   b. $(x-2)^2+y^2=16$
   c. $(x-2)^2+y^2=10$
   d. $(x+4)^2+y^2=16$

9. A circle in the xy-plane has the equation $(x+4)^2+(y-5)^2=16$. Which of the following points does NOT lie in the interior of the circle? *(no calculator)*

   a. $(-1,1)$
   b. $(-4,5)$
   c. $(-6,7)$
   d. $(-3,8)$

10. Which of the following is an equation of a circle in the xy-plane with center (0,3) and a radius with endpoint $\left(\frac{5}{3}, 4\right)$? *(no calculator)*

    a. $(x-3)^2 + y^2 = \frac{34}{9}$.

    b. $x^2 + (y-3)^2 = \frac{34}{9}$.

    c. $x^2 + (y-3)^2 = \sqrt{\frac{34}{9}}$

    d. $(x-3)^2 + y^2 = \sqrt{\frac{34}{9}}$