

**High School HS Geometry**  
**Review of Coordinate Geometry**

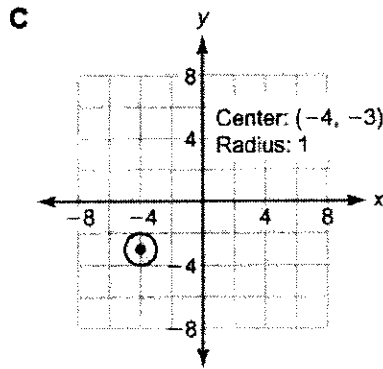
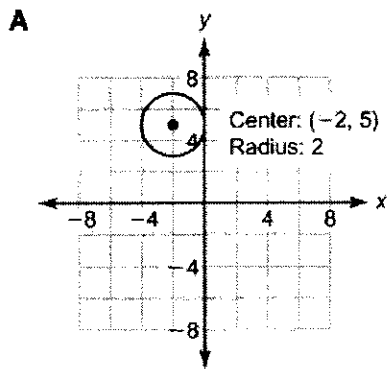
1. Identify the center and radius of the circle given the equation  $(x - 15)^2 + (y + 9)^2 = 25$ .

$\uparrow$                        $\uparrow$   $r^2$   
 opposite                       $r = 5$   
 sign

- A. Center: (-15, 9), Radius: 5
- B. Center: (15, -9), Radius: 25
- C. Center: (-15, 9), Radius: 25
- D. Center: (15, -9), Radius: 5

2.

Identify the center and radius for the equation  $y^2 = 8x - x^2 - 24 - 6y$ .



$$x^2 - 8x + y^2 + 6y = -24$$

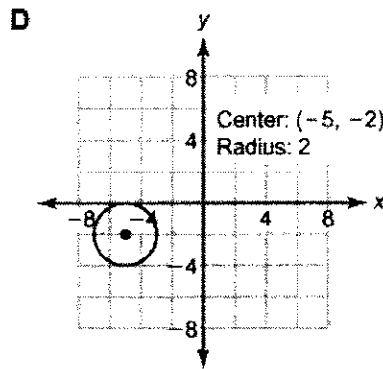
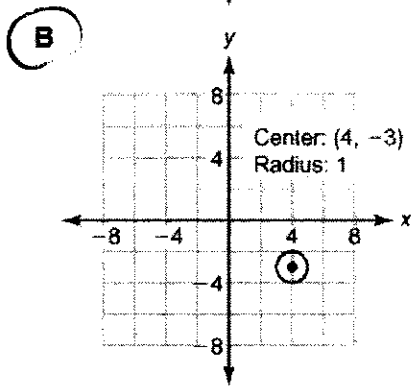
$$(x - 4)^2 + (y + 3)^2 = -24$$

$$+16$$

$$+9$$

$$(x - 4)^2 + (y + 3)^2 = 1$$

$$(4, -3) \quad r = 1$$



- A. Graph A
- B. Graph B
- C. Graph C
- D. Graph D

3. Identify center and radius of the following circle.

$$x^2 + y^2 - 4x + 10y + 20 = 0$$

- A. Center: (10,20) Radius: 4
- B. Center: (-4,10) Radius: 20
- C. Center: (2,-5) Radius: 9
- D. Center: (2, -5) Radius: 3

$$x^2 - 4x + y^2 + 10y = -20$$

$$(x-2)^2 + (y+5)^2 = -20 + 4 + 25$$

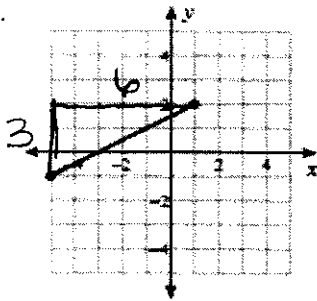
$$(x-2)^2 + (y+5)^2 = 9$$

4. The graph of a circle has its center at (2, 3) with a radius of 10 units. Which point does NOT lie on the circle? \* Could Graph \*

- A. (-4, -5) ON
- B. (8, 11) ON
- C. (-2, 6) IN
- D. (-4, 11)

- A.  $\sqrt{(-4-2)^2 + (-5-3)^2}$
- B.  $\sqrt{(8-2)^2 + (11-3)^2}$
- C.  $\sqrt{(-2-2)^2 + (6-3)^2}$

5.



$$9 + 36 = 45$$

$$= \sqrt{45}$$

$$= \sqrt{9 \cdot 5}$$

$$\approx$$

Find the distance between each pair of points. Round your answer to the nearest tenth, if necessary.

- A. 3
- B. 6.7
- C. 4.1
- D. 2.2

6. Find the distance between each pair of points. Round your answer to the nearest tenth, if necessary.

When the coordinate points are:  $(x_1, y_1) = (5, 4)$  and  $(x_2, y_2) = (-5, 6)$

- A. 9.4
- B. 10.2
- C. 3.5
- D. 10

$$\sqrt{(-5-5)^2 + (6-4)^2}$$

$$\sqrt{(-10)^2 + (2)^2}$$

$$\sqrt{100 + 4}$$

$$\sqrt{104}$$

7. Find the midpoint of the line segment with the given endpoints:

$(-3, -8)$  and  $(-10, 4)$

- A.  $(-6.5, -2)$
- B.  $(-17, 16)$
- C.  $(-5.5, -3)$
- D.  $(3.5, -6)$

$$\frac{-3-10}{2}, \frac{-8+4}{2}$$
$$\frac{-13}{2}, \frac{-4}{2}$$

8. Write the slope-intercept form of the equation of the line described.

through:  $(0, -4)$ , parallel to  $y = \frac{2}{3}x + 2$

A.  $y = -\frac{2}{3}x - 4$

$$y - -4 = \frac{2}{3}(x - 0)$$

B.  $y = \frac{2}{3}x - 4$

C.  $y = -x - 4$

D.  $y = -4x - \frac{2}{3}$

9. Points A $(-8, 12)$  and B $(-10, 18)$  are endpoints of directed line segment AB. What are the coordinates of point P that partitions AB in the ratio 3:2?

A.  $(-8.8, 0)$

B.  $(-8.8, -6)$

C.  $(-9.2, 0)$

D.  $(-9.2, 15.6)$

$$-8 + \frac{3}{5}(-10 - -8)$$

$$12 + \frac{3}{5}(18 - 12)$$

10. Identify the equation of the line that is perpendicular to  $x - 4y = 16$  and passes through the point  $(3, 1)$ .

A.  $y = -4x - 2$

B.  $y = \frac{1}{4}x + 13$

C.  $y = -4x + 13$

D.  $y = \frac{1}{4}x - 4$

$$-4y = -x + 16$$

$$y = \frac{1}{4}x - 4$$

$$y - 1 = -4(x - 3)$$

$$y - 1 = -4x + 12$$

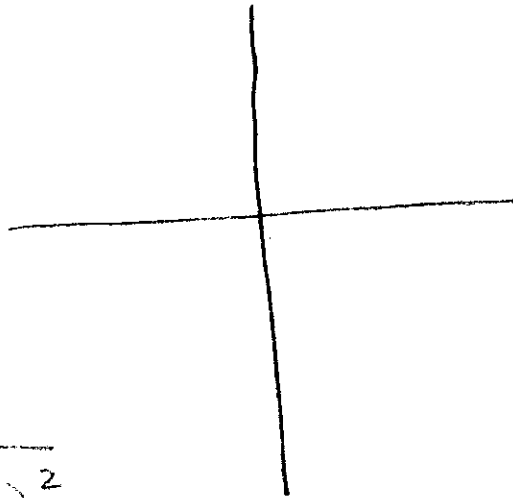
11. The coordinates of the endpoints of segment AB are A(-8, -2) and B(16, 6). Point P is on segment AB. What are the coordinates of point P, such that AP:PB is 3:5?

A. (1, 1)       $-8 + \frac{3}{8}(16 - -8)$        $-2 + \frac{3}{8}(6 - -2)$   
 B. (7, 3)  
 C. (9.6, 3.6)  
 D. (6.4, 2.8)

$-8 + \frac{3}{8}(24)$        $-2 + \frac{3}{8}(8)$   
 $-8 + 9$        $-2 + 3$

12. The vertices of square RSTV have coordinates R(-1, 5), S(-3, 1), T(-7, 3), and V(-5, 7). What is the perimeter of RSTV?

- A.  $\sqrt{20}$   
 B.  $\sqrt{40}$   
 C.  $4\sqrt{20}$   
 D.  $4\sqrt{40}$



$$\begin{aligned}
 RS &= \sqrt{(-3 - -1)^2 + (1 - 5)^2} \\
 &= \sqrt{(-3 + 1)^2 + (-4)^2} \\
 &= \sqrt{(-2)^2 + (-4)^2} \\
 &= \sqrt{4 + 16} \\
 &= \sqrt{20}
 \end{aligned}$$