Classroom Voting Questions: Precalculus

The Coordinate Plane

1. Find the coordinates of the point which is 3 units below the x-axis and 4 units to the right of the y-axis.

   (a) $(3, 4)$
   (b) $(-3, 4)$
   (c) $(4, -3)$
   (d) $(-4, -3)$

2. In which quadrant is $x < 0$ and $y < 0$?

   (a) I
   (b) II
   (c) III
   (d) IV

3. Find the distance between $(2, -5)$ and $(6, -2)$.

   (a) 25
   (b) 5
   (c) $\sqrt{113}$
   (d) $\sqrt{23}$

4. Based upon the distances between each pair of points, we can conclude that the points $(-5, 6)$, $(0, 8)$, and $(-3, 1)$ form the vertices of what kind of triangle?

   (a) Equilateral
   (b) Isosceles
   (c) Right
   (d) Both (b) and (c)

5. The endpoints of a line segment are $(1, -5)$ and $(-7, 4)$. What are the coordinates of the midpoint?

   (a) $(-6, -1)$
   (b) $(.4, 4.5)$
   (c) $(8, -9)$
   (d) $(-3, -.5)$

6. There is at least one point in the coordinate plane with x-coordinate -2 which is at most 5 units from the point $(2, 3)$.

   (a) True, and I am very confident.
   (b) True, but I am not very confident.
   (c) False, but I am not very confident.
   (d) False, and I am very confident.

7. There is at least one point in the coordinate plane with x-coordinate -2 and y-coordinate greater than 4 which is at most 5 units from the point $(2, 3)$.

   (a) True, and I am very confident.
   (b) True, but I am not very confident.
   (c) False, but I am not very confident.
   (d) False, and I am very confident.

8. Under what conditions will the distance from the point $(2, 3)$ to the point $(-2, y)$ be greater than 5 units?

   (a) $y > 6$
   (b) $y < 1$
   (c) $0 < y < 5$
   (d) None of the above.

9. Name the center and radius of the circle whose equation is $(x + 2)^2 + y^2 = 100$.

   (a) Center $= (2, 0)$, radius $= 10$
   (b) Center $= (-2, 0)$, radius $= 100$
   (c) Center $= (0, 2)$, radius $= 100$

(d) Center $= (-2, 0)$, radius $= 10$

10. Find the center and radius of the circle given by the equation $x^2 + y^2 - 10x + 6y = 3$.

    (a) Center: $(-5, 3)$; radius: 37
    (b) Center: $(5, -3)$; radius: 37
    (c) Center: $(-5, 3)$; radius: $\sqrt{37}$
    (d) Center: $(5, -3)$; radius: $\sqrt{37}$

11. The point $(4, -1)$ is on the circle with center $(1, 2)$ and radius 5.

    (a) True, and I am very confident.
    (b) True, but I am not very confident.
    (c) False, but I am not very confident.
    (d) False, and I am very confident.

12. The point $(-8, -3)$ is on the graph of the equation $(x + 8)^2 + (y + 1)^2 = 4$.

    (a) True, and I am very confident.
    (b) True, but I am not very confident.
    (c) False, but I am not very confident.
    (d) False, and I am very confident.

13. A diameter of a circle has endpoints $(4, -3)$ and $(-2, 5)$. What is the equation of this circle?

    (a) $(x - 1)^2 + (y - 1)^2 = 10$
    (b) $(x - 1)^2 + (y - 1)^2 = 25$
    (c) $(x + 1)^2 + (y + 1)^2 = 100$
    (d) $(x - 3)^2 + (y + 1)^2 = 10$

14. The point $(1, 4)$ is inside of the graph of the circle described by the equation

$$(x - 3)^2 + (y + 1)^2 = 26.$$

    (a) True, and I am very confident.
    (b) True, but I am not very confident.

(c) False, but I am not very confident.

(d) False, and I am very confident.

15. Find the equation for the lower half of the circle whose equation is $x^2 + y^2 = 9$.

(a) $y = \sqrt{9 - x^2}$

(b) $y = -\sqrt{9 - x^2}$

(c) $x = \sqrt{9 - y^2}$

(d) $x = -\sqrt{9 - y^2}$