1. Find the \( x \) and \( y \) intercepts for \( 2x^2 - 6x + 3y = 10 \). Write answers as ordered pairs.

2. If \( M = \left( \frac{-1}{2}, 3 \right) \) is the midpoint of line segment \( AB \) where \( A = (-4, 8) \), find the the coordinates of \( B \).

3. Determine the slope and \( y \)-intercept for \( 13y + 2x + 4 = 0 \). Label your answers.

4. Which of the points \( A = (1, -2) \) or \( B = (8, 9) \) is closer to \( C = (5, 3) \).

5. Show algebraically that \( A = (-3, 4) \), \( B = (2, 1) \) and \( C = (-6, -1) \) are the vertices of a right triangle. State why – Be specific.

6. Find the equation of the line with \( x \)-intercept at 7 and passing through \((5, -4)\).

7. Find the equation of the line that passes through \((-3, 2)\) and \((5, -4)\).

8. Show that \( x^2 + y^2 - 8x + 6y + 3 = 0 \) represents a circle and find its center and radius.

9. Find the equation of the circle that has endpoints of the diameter at \((11, -13)\) and \((-5, 3)\).

10. Find the equation of the line that is parallel to \( 7x + 3y = 5 \) and passes through \((1, -2)\).

11. Find the equation of the line through \((5, -6)\) perpendicular to the line passing through \((2, -4)\) and \((-3, 2)\).

12. Sketch the graph of the line with slope \(-\frac{3}{2}\) and passes through the point \((1, -2)\). Label graph.

13. Calculate the slope of the given line:

14. Find the equation of the line in problem \#13.

15. Determine whether the following lines are parallel, perpendicular, or neither. State why. (Do not solve by graphing).

\[-3x + 4y = 7 \quad \text{and} \quad 8x - 6y = 5\]

16. Find the equation of the line that passes through \((7, -\frac{1}{2})\) and is perpendicular to the \( y \)-axis.
1. \((0, \frac{10}{3}), \left(3 \pm \frac{\sqrt{29}}{2}, 0\right)\)

2. \(B = (3, -2)\)

3. \(m = -\frac{2}{13}, \left(0, -\frac{4}{13}\right)\)

4. A is closer

5. \(m_{AC} = \frac{5}{3}, m_{AB} = -\frac{3}{5}\). Hence since the slopes are negative reciprocals of one another, AC and AB are perpendicular. Hence, they produce a right angle. Therefore \(\triangle ABC\) is a right triangle.

6. \(y = 2x - 14\)

7. \(y = -\frac{3}{4}x - \frac{1}{4}\)

8. \((x - 4)^2 + (y + 3)^2 = 22;\) center = \((4, -3)\); radius = \(\sqrt{22}\)

9. \((x - 3)^2 + (y + 5)^2 = 128\)

10. \(y = -\frac{7}{3}x + \frac{1}{3}\)

11. \(y = \frac{5}{6}x - \frac{61}{6}\)

12. See instructor for answer.

13. \(m = -\frac{3}{5}\)

14. \(y = -\frac{3}{5} - \frac{1}{5}\)

15. neither

16. \(y = -\frac{1}{2}\)