TOPIC 6: Graphing and the Coordinate Plane

1. Graph the following points: \((-3,2), \,(5,-1), \,(-4,-7)\)

2. Find the distance between the points: \((-3,3)\) and \((-5,-8)\)

3. Find the slope of the line joining the points: \((2,-4)\) and \((-3,-7)\)

4. Find the slope and y-intercept, and sketch the graph: \(x = -2y + 6\)

5. Find an equation of the line through the points: \((-2,-1)\) and \((2,4)\)

6. Find an equation of the line through \((10,-1)\) with slope \(-\frac{2}{5}\)

7. Graph and write an equation for the line through \((5,5)\) and \((5,-1)\)

8. Graph and write an equation for the horizontal line through the point \((-3,-2)\)

9. Graph \(3x - 4y \geq 12\)

10. Sketch the graph of \(y = (x-3)(x+2)\)

ANSWERS

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1. 

2. \(5\sqrt{5}\)

3. \(\frac{3}{5}\)
4. slope \( m = -1 \)
   
   \( y \)-intercept \( (0, 3) \)

5. \( y = \frac{5}{4}x + \frac{3}{2} \) or \( 5x - 4y = -6 \)

6. \( y = \frac{-2}{5}x + 3 \) or \( 2x + 5y = 15 \)

7. \( x = 5 \)
8. \( y = -2 \)

9. 

10. vertex \( \left( \frac{1}{2}, -\frac{25}{4} \right) \)
    
    - \text{y-intercept} \( (0, -6) \)
    - \text{x-intercepts} \( (3,0), (-2,0) \)