Solutions to Analytic Geometry Problems

Civil Engineering Licensure Exam – Mock Exam (Day 4)

February 25, 2025

Solutions

1. Find the distance between the points $(3, 4)$ and $(-1, 1)$.

   Solution: Finding the Distance Between Two Points

2. The midpoint of the line segment joining $(2, 3)$ and $(8, 7)$ is:

   Solution: Midpoint Formula

3. Find the slope of the line passing through the points $(4, 6)$ and $(2, 1)$.

   Solution: Finding the Slope Given 2 Points

4. The equation of a line passing through $(2, 3)$ with a slope of 4 is:

   Solution: How To Write The Equation of a Line Given The Slope and a Point

5. Identify the conic section represented by the equation:

   $$x^2 + 4y^2 = 16$$

   Solution: Identifying Conic Sections

6. Find the equation of a line passing through the points $(5, 2)$ and $(9, 8)$.

   Solution: How To Write The Equation of a Line Given The Slope and a Point

7. A line has an equation $3x - 4y = 12$. Find the slope and the y-intercept.

   Solution: Determine the Slope and Y-Intercept from an Equation in Standard Form

8. Find the equation of a circle with center $(3, 4)$ and radius 5.

   Solution: Finding the Equation of a Circle Given the Center and Radius

9. Find the foci of the ellipse given by the equation:

   $$\frac{x^2}{25} + \frac{y^2}{9} = 1$$

   Solution: How to Find the Vertices and Foci of an Ellipse

10. Determine the equation of a parabola with vertex $(0, 0)$ and focus $(0, 3)$.

    Solution: Determine the Equation of a Parabola Given the Vertex and Focus