

1 Problems

Exercise 1. Find the equation of the line through $(1, 0)$ and $(0, 1)$.

Exercise 2. Find the equation of the line through $(0, 0)$ and $(1, 1)$.

Exercise 3. Find the equation of the line through $(0, 1)$ and $(1, 1)$.

Exercise 4. Find the equation of a circle centered at $(0, 0)$ with radius 5.

Exercise 5. Solve the quadratic equation $y = x^2 - 4x + 4$.

2 Answer key

Exercise 1. $y = -(x - 1)$

Exercise 2. $y = x$.

Exercise 3. $y = 1$

Exercise 4. $x^2 + y^2 = 25$.

Exercise 5. $x = 2$

3 Solutions

Exercise 1. The slope $m = \frac{1-0}{0-1} = -1$ and so we get $y = -(x - 1)$ by the point-slope formula.

Exercise 2. The slope $m = \frac{1-0}{1-0} = 1$ and so we get $y = x$.

Exercise 3. Again by point-slope we see $m = \frac{1-1}{1-0} = 0$ so $y = 1$ the constant function.

Exercise 4. This follows from the formula describing a circle.

Exercise 5. Use the quadratic formula or factor directly: $y = x^2 - 4x + 4 = (x - 2)(x - 2)$.