1.5 - Coordinates and Graphs - Part 2

The graph of an equation in two variables is the set of all points with coordinates satisfying the equation.

Example. Determine whether the following points are on the graph of the given equation:

• \((1, \frac{5}{4}), x + 8y = 11\).

• \((\sqrt{2}, -\sqrt{3}), x^2 - y^2 = 5\)

Intercepts. Suppose we have an equation and its graph.

If a point of the graph is on the , its \(x\)-coordinate is called an .

Therefore, the of the point is .

If a point of the graph is on the , its \(y\)-coordinate is called an .

Therefore, the of the point is .
Example. Find the intercepts for the following equations:

- $4x - 6y = 12$

- $\sqrt{2} - x + 1 = y$

- $y^2 = x^3 - x$
Example. Find the intercepts for the following equations:

- $2x + 3y = 7$

- $x^2 + 6y = y^2$

- $xy = x^2 + 1$