

Basic Mathematics - Quiz 1

Solution

Give an equation of the line passing through the points $(3, 2)$ and $(-2, 5)$.
First of all, we compute the slope a of the line :

$$a = \frac{y_2 - y_1}{x_2 - x_1} = \frac{5 - 2}{(-2) - 3} = -\frac{3}{5}.$$

Then we know that an equation of this line has the form

$$y = -\frac{3}{5}x + b$$

for some real number b . As $(3, 2)$ is on the line, it should satisfy the equation so the following hold :

$$2 = -\frac{3}{5} \times 3 + b$$

so

$$b = 2 + \frac{3}{5} \times 3 = \frac{10}{5} + \frac{9}{5} = \frac{19}{5}.$$

Finally, a possible equation for this line is

$$y = -\frac{3}{5}x + \frac{19}{5}.$$

Another possibility, obtained by multiplying by 5 and moving one term, is $5y + 3x = 19$.