

Find an equation

line $\frac{y-1}{x-2} = \frac{y_1-1}{x_1-2}$

1. Find the equation of the line passing through the points

$(1, 2)$ and $(3, 4)$

$\frac{y-2}{x-1} = \frac{4-2}{3-1}$
 $\frac{y-2}{x-1} = \frac{2}{2}$
 $\frac{y-2}{x-1} = 1$
 $y-2 = x-1$
 $y = x+1$

2. Find the equation of the line passing through the points

$(1, 2)$ and $(3, 0)$

$\frac{y-2}{x-1} = \frac{0-2}{3-1}$

$(1, 2)$ and $(3, 0)$

$\frac{y-2}{x-1} = -1$

$(1, 2)$ and $(3, 0)$

$\frac{y-2}{x-1} = -1$

3. Find the equation of the line passing through the points $(1, 2)$ and $(3, 0)$ and perpendicular to the line $y = x + 1$

$\frac{y-2}{x-1} = \frac{1}{2}$ (perpendicular to $y = x + 1$)
 $\frac{y-2}{x-1} = \frac{1}{2}$
 $2(y-2) = x-1$
 $2y-4 = x-1$
 $2y = x+3$
 $y = \frac{x+3}{2}$

4. Find the equation of the line passing through the points

$(1, 2)$ and $(3, 0)$

$\frac{y-2}{x-1} = \frac{0-2}{3-1}$

$(1, 2)$ and $(3, 0)$

$\frac{y-2}{x-1} = -1$

5. Find the equation of the line passing through the points

$(1, 2)$ and $(3, 0)$

$\frac{y-2}{x-1} = \frac{0-2}{3-1}$

$(1, 2)$ and $(3, 0)$

$\frac{y-2}{x-1} = -1$

$(1, 2)$ and $(3, 0)$

$\frac{y-2}{x-1} = -1$

6. Answer the following

a) What is the slope of the line $y = 2x + 3$?

The slope of the line $y = 2x + 3$ is 2.

b) What is the slope of the line $y = -3x + 4$?

The slope of the line $y = -3x + 4$ is -3.

c) What is the slope of the line $y = \frac{1}{2}x + 1$?

The slope of the line $y = \frac{1}{2}x + 1$ is $\frac{1}{2}$.

d) Find the slope of the line passing through the points $(1, 2)$ and $(3, 0)$. Does this line have any other points? If so, what are they?

The slope of the line passing through the points $(1, 2)$ and $(3, 0)$ is $\frac{0-2}{3-1} = -1$.
The equation of the line is $y - 2 = -1(x - 1)$, which simplifies to $y = -x + 3$.
Other points on the line include $(0, 3)$, $(2, 1)$, and $(3, 0)$.