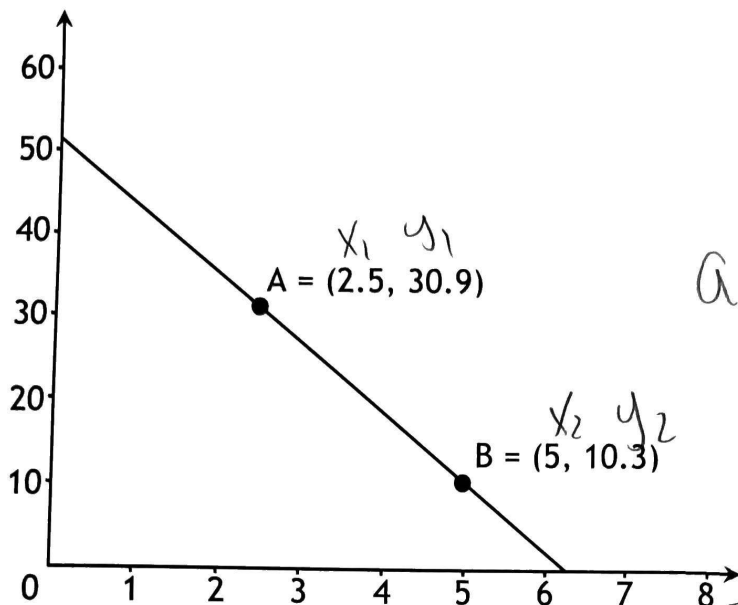# SLOPE OF A LINE

1. **Calculate the slope of the line for the following functions represented on each of the Cartesian Planes below.**
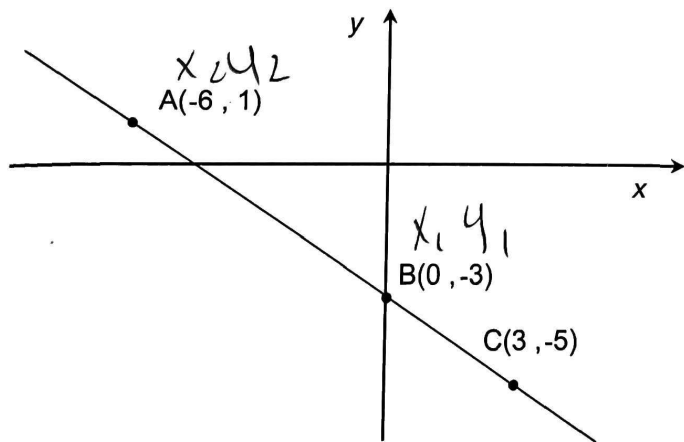
a)

$x_1 \; y_1$

A = (2.5, 30.9)

$x_2 \; y_2$

B = (5, 10.3)

$$a = \frac{10.3 - 30.9}{5 - 2.5}$$

$$= \frac{-20.2}{2.5}$$

$$a = -8.28 \text{ or } \frac{-207}{25}$$

↑ Negative slope

b)

$x_2 \; y_2$

A(-6 , 1)

$x_1 \; y_1$

B(0 ,-3)

C(3 ,-5)

$$a = \frac{1 - {}^-3}{-6 - 0} = \frac{4}{-6}$$

$$a = \frac{-2}{3}$$

c)

$x_2 \; y_2$

(21, 42)

(9, 18)
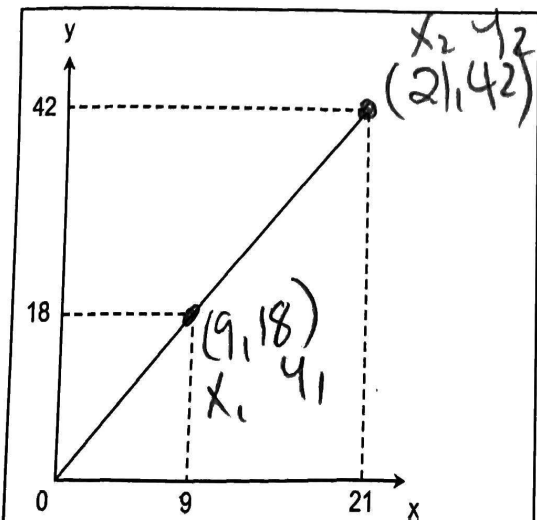
$x_1 \; y_1$

$$a = \frac{42 - 18}{21 - 9} = \frac{24}{12} = 2$$

$$a = 2$$

SLOPE OF A LINE

2. What is the slope of a linear function that passes through the points A(5, 0) and B(-10, 3)?
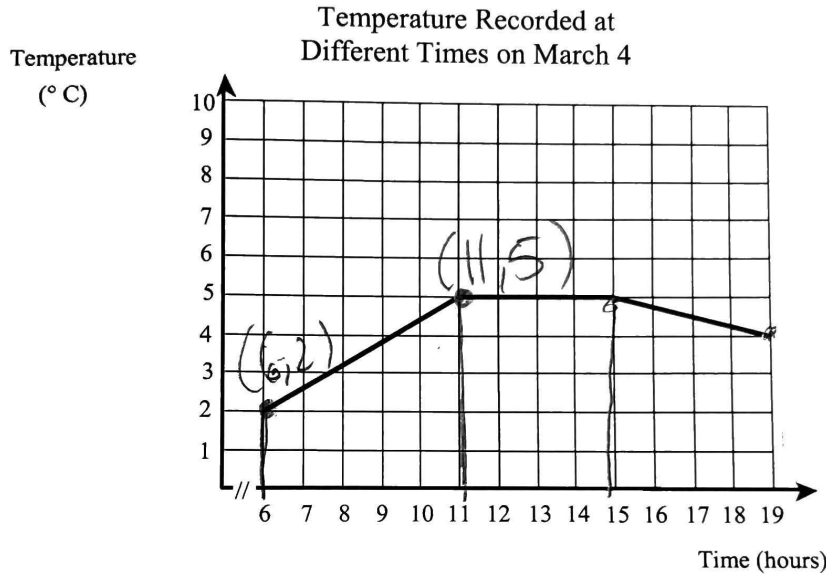
$x_2 y_2$

$x_1 y_1$

$$a = \frac{3-0}{-10-5} = \frac{3}{-15} = \boxed{\frac{-1}{5}}$$

3. The graph below illustrates the different temperatures recorded last March 4 from 06:00h to 19:00h

Temperature (°C)

Temperature Recorded at Different Times on March 4

(11,5)

(6,2)

Time (hours)

What was the slope in temperature between the following times?

$\left(\frac{Rise}{Run}\right)$

OR find two coordinate find the slope

a) 06:00h and 11:00h

Positive slope

$(6,2) \quad (11,5) \rightarrow a = \frac{5-2}{11-6} = \boxed{\frac{3}{5}}$

$x_1 y_1 \quad x_2 y_2$

b) 11:00h and 15:00h

constant slope

$(11,5) \quad (15,5)$

$x_1 y_1 \quad x_2 y_2$

$\rightarrow a = \frac{5-5}{15-11} = \boxed{0} \checkmark$

c) 15:00h and 19:00h

negative slope

$(15,5) \quad (19,4)$

$x_1 y_1 \quad x_2 y_2$

$\rightarrow a = \frac{4-5}{19-15} = \boxed{\frac{-1}{4}}$