

# Math 9

Name: \_\_\_\_\_

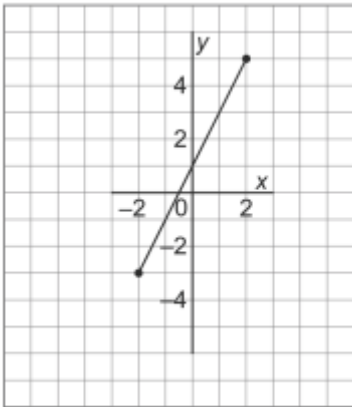
## 4.5 – Using Graphs to Estimate Values

Date: \_\_\_\_\_

We can estimate values of quantities from a graph using **INTERPOLATION** and **EXTRAPOLATION**.

**INTERPOLATION** – Estimating a value that lies \_\_\_\_\_ two \_\_\_\_\_ points on a graph.

**EXTRAPOLATION** – Estimating a value by \_\_\_\_\_ a graph \_\_\_\_\_ the given points.

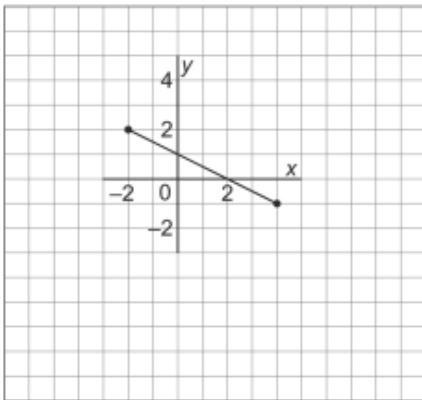


Use *Interpolation* to determine the following:

- a. value of  $y$  when  $x = 1$
- b. value of  $y$  when  $x = -2$
- c. value of  $x$  when  $y = 3$
- d. value of  $x$  when  $y = -2$

Use *Extrapolation* to determine the following:

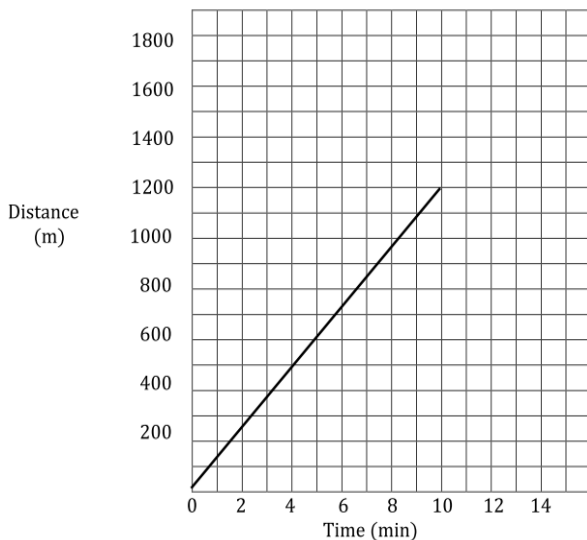
- a. value of  $y$  when  $x = 3$
- b. value of  $y$  when  $x = -4$
- c. value of  $x$  when  $y = 6$
- d. value of  $x$  when  $y = -5$



Use the graph to determine the following:

- a. value of  $x$  when  $y = -1$
- b. value of  $y$  when  $x = -2$
- c. value of  $y$  when  $x = 8$
- d. value of  $x$  when  $y = 4$

The following graph shows the linear relation between time,  $t$ , and the distance,  $d$ , ran by a jogger.



Determine the distance jogged at the following times:

- a.  $t = 4 \text{ min}$
- b.  $t = 7 \text{ min}$

At what time has the person jogged the following distances?

- a.  $1200 \text{ m}$
- b.  $600 \text{ m}$

Predict how long it will take to jog  $1400 \text{ m}$ .

Predict the distance jogged in  $14 \text{ mins}$ .