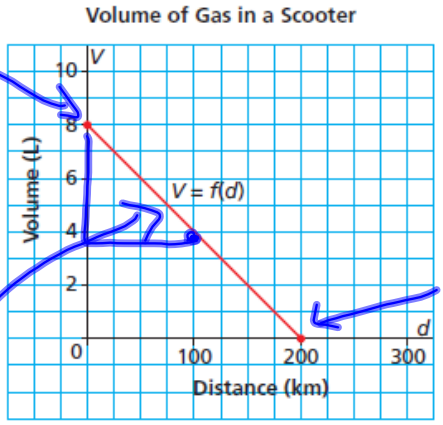
This graph shows the fuel consumption of a scooter with a full tank of gas at the beginning of a journey.



(0,8)

(200,0)

Vertical = 8L

Horizontal = 200km

a) Write the coordinates of the points where the graph intersects the axes. Determine the vertical and horizontal intercepts. Describe what the points of intersection represent.

b) What are the domain and range of this function?

Rate of Change. = $\frac{\text{Change in Vertical}}{\text{Change in Horizontal}}$ $\left(\frac{\Delta y}{\Delta x}\right)$

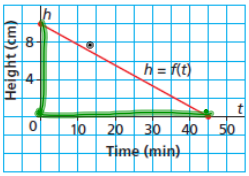
$\frac{4L}{100km} = \frac{1L}{25km}$ $= \frac{-8L}{200km} = \frac{-1L}{25km}$

Domain: $\{0 \leq d \leq 200\}$

Range: $\{0 \leq V \leq 8\}$

This graph shows how the height of a burning candle changes with time.

Height of a Burning Candle



a) Write the coordinates of the points where the graph intersects the axes. Determine the vertical and horizontal intercepts. Describe what the points of intersection represent.

(a) (0, 10) & (45, 0)

V. Intercept ⇒ height @ ignition

H. Intercept ⇒ Length of time for candle to melt away

b) What are the domain and range of this function?

Domain: $0 \leq t \leq 45$

Range: $0 \leq h \leq 10$

Rate of Change:

$ROC = \frac{-10\ cm}{45\ min}$

$= \frac{-1\ cm}{4.5\ min}$

Equation??

$h = \boxed{\ }\,t + \boxed{y\text{-Intercept}}$

ROC

$h = \frac{-1}{4.5}t + 10$

t	h
0	10

What was height of candle after 13 minutes?

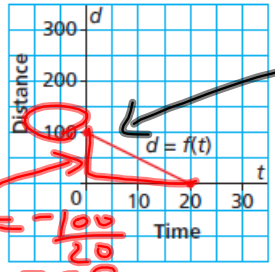
$t = 13$

$h = \frac{-1}{4.5}(13) + 10$

$h = 7.11\ cm$

Which graph has a rate of change of −5 and a vertical intercept of 100? Justify your answer.

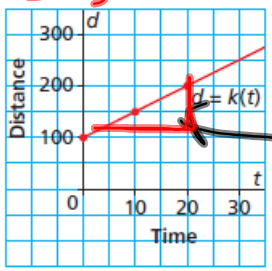
a)



Negative ROC } Slants from Left Down to Right

$ROC = \frac{-100}{20} = -5$

b)



Positive ROC } Slants upward from Left to Right

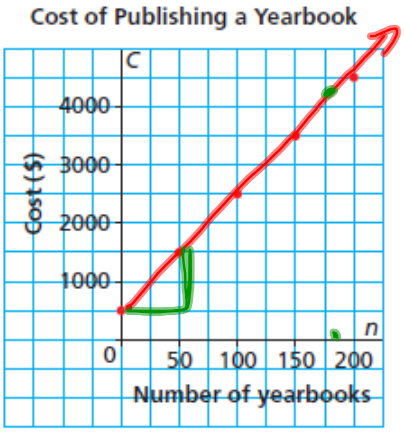
$ROC = \frac{100}{20} = 5$

Linear Relations . . .

(a) $d = -5t + 100$

(b) $d = 5t + 100$

This graph shows the cost of publishing a school yearbook for Collège Louis-Riel in Winnipeg.



$C = 20n + 500$

$4200 = 20n + 500$

$\frac{3700}{20} = \frac{20n}{20}$

$185 = n$

$ROC = \frac{\$1000}{50 \text{ Books}} = \$20/\text{Book}$

The budget for publishing costs is $4200. What is the maximum number of books that can be printed?

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