Math 10-C Interpret Graphs Assignment Name: KEY

Fuel Consumption of a Smart Car

Pearson pg. 321

Fuel Consumption of an SUV

Pearson pg. 321

1. What is the x-intercept for the graph of the smart car and for the graph of the SUV. What do the x-intercepts mean in the context of the problem?

Smart Car
x-int = 580 km
The smart car can travel 580 km on 35L.

SUV
x-int = 625 km
The SUV can travel ~~625~~ 625 km on 80L.

2. What is the y-intercept for the graph of the smart car and for the graph of the SUV. What do the y-intercepts mean in the context of the problem?

Smart Car
y-int = 35L
The Initial amount of fuel in tank.

SUV
y-int = 80 L
The initial amount of fuel in tank.

3. What is the domain and range for the graph of the smart car in words and in set notation?

D: All real #'s greater than or equal to 0 and less than or equal to 580.
$\{d \mid 0 \le d \le 580, d \in R\}$
R: All real #'s greater than or equal to 0 and less than or equal to 35.
$\{v \mid 0 \le v \le 35, v \in R\}$

4. What is the domain and range for the graph of the SUV in words and in interval notation?

D: All real #'s greater than or equal to 0 and less than or equal to 625.
[0, 625]
R: All real #'s greater than or equal to 0 and less than or equal to 80.
[0, 80]

★ Sketch a graph to enhance meaning of t and y intercept.

1. You are emptying a full 500 mL pop bottle at a rate of 25 mL/s as given by the equation $V = 500 - 25t$, where V is the volume of pop in the bottle in mL and t is the amount of time passed in seconds. Calculate the x and y intercepts and explain what they mean in the context of the problem.

x-int (t-int) when V=0

$0 = 500 - 25t$

$25t = 500$

$\boxed{t = 20s}$

It takes 20s to empty bottle.

y-int (V-int) when t=0

$V = 500 - 25(0)$

$\boxed{V = 500\,mL}$

Initial volume is 500 mL.

2. Advance tickets for a concert sold for \$8 each and tickets at the door were \$12 each. The revenue from ticket sales for the concert was \$1120. This situation can be represented by the equation, $8a + 12d = 1120$, where a is the number of advance tickets sold and d is the number of tickets sold at the door. Calculate the x and y intercepts and explain what they mean in the context of the problem.

x-int (a-int) when d=0

$8a + 12(0) = 1120$

$8a = 1120$

$\boxed{a = 140}$

If only advance tickets were sold, they would need to sell 140 tickets to make \$1120.

y-int (d-int) when a=0

$8(0) + 12d = 1120$

$12d = 1120$

$\boxed{d = 93.\overline{3}}$

If only door tickets were sold, they would need to sell $93.\overline{3}$ tickets to make \$1120.