Rel & Func C4 - Interpret Graphs

Identify key points (intercepts, maximums, minimums, etc.) from a graph

Identify domain & range from a graph

Calculate x and y intercepts given an equation

Key Points

Key points on a graph are often the x and y intercepts.

x-intercept: The x-coordinate of the point where a line or curve crosses the x-axis. The value of x when y = 0.

y-intercept: The y-coordinate of the point where a line or curve crosses the y-axis. The value of y when x = 0.

An airplane flies directly from Saskatoon, SK, to Vancouver, BC. The graph shows the relationship between the distance from Vancouver, d, in kilometres, and the flying time, t, in hours.

MHR pg. 367

t-intercept = 2.0 hrs
Time for entire trip.

d-intercept = 1200 km
distance for entire trip

D: $\{t \mid 0 \le t \le 2, t \in R\}$ $[0,2]$

R: $\{d \mid 0 \le d \le 1200, d \in R\}$ $[0,1200]$

Example

Pearson pg. 279

Determine the x and y intercepts and state what they mean in the given context. Determine domain and range.

t-int = 90s

Total time spent watering.

v-int = 1.0 L

Initial volume of 1.0 L

D: $\{t \mid 0 \le t \le 90, t \in R\}$ $[0, 90]$

R: $\{v \mid 0 \le v \le 1.75, v \in R\}$ $[0, 1.75]$

Example

Pearson pg. 261

Determine the x and y intercepts and state what they mean in the given context. Determine domain and range.

t-int = N/A

h-int = 2m

2m at midnight (initial depth)

D: $[0, \infty)$ $\{t \mid t \ge 0, t \in R\}$

R: $\{h \mid 2 \le h \le 8, h \in R\}$ $[2, 8]$

Example

Pearson pg. 300

Determine the x and y intercepts and state what they mean in the given context.
Determine domain and range.

x-int: N/A

y-int: \$12

Cost of pizza w/ 0 toppings.

D: $\{0, 1, 2, 3, 4, 5\}$

R: $\{12, 12.75, 13.50, 14.25, 15, 15.75\}$

Example

Pearson pg. 306

Determine the x and y intercepts and state what they mean in the given context.
Determine domain and range.

x-int = 0

y-int = 0

Initial volume is 0.

D: $\{t \mid 0 \le t \le 120, t \in R\}$ $[0, 120]$

R: $\{v \mid 0 \le v \le 6000, v \in R\}$ $[0, 6000]$

Example

Pearson pg. 306

Determine the x and y intercepts and state what they mean in the given context.
Determine domain and range.

x-int = 60 min

It takes 60 min to empty.

y-int = 6000

Initial volume is 6000 L.

D: [0, 60]

R: [0, 6000]

Practice

Interpret Graphs Assignment (Front Side)

Quick Check

Calculate Intercepts

Brooke wants to save $336 to decorate her bedroom. She has two part-time jobs. On weekends, she works as a snowboard instructor and earns $12 per hour. On weeknights, she earns $16 per hour working as a high-school tutor.

a) Write an equation to represent the number of hours Brooke needs to work as a snowboard instructor, S, and as a tutor, T.

$$12S + 16T = 336$$

b) Calculate the x and y intercepts (S and T intercepts) and explain what they mean in the context of the problem.

x-int (S-int) when T=0

$$12S + 16(0) = 336$$
$$12S = 336$$
$$\boxed{S = 28}$$

y-int (T-int) when S=0

$$12(0) + 16T = 336$$
$$16T = 336$$
$$\boxed{T = 21}$$

Practice: Interpreting Graphs Assignment (back page)

Rel & Func C4 - Interpret Graphs

Identify key points (intercepts, maximums, minimums, etc.) from a graph

Identify domain & range from a graph

Calculate x and y intercepts given an equation