C4 - Domain + Range Notation Asgn

KEY

1. a) D: $\{1, 2, 3, 4, 5, 6\}$
   R: $\{40, 80, 120, 160, 200, 240\}$

   b) D: $\{0, 1, 2, 3\}$
   R: $\{0, 0.50, 1.00, 1.50\}$

   c) D: $\{1, 4, 9, 16, 25, 36, 49, 64, 81, 100\}$
   R: $\{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$

   d) D: $\{-8, -5, -2, 1, 4\}$
   R: $\{-8, -4, 0, 4, 8\}$

   e) D: $\{-4, 0, 1, 2, 3\}$
   R: $\{-1, 0, 1, 4, 5, 6, 7\}$

2. a) D: $\{d \mid 0 \le d < 20,\ d \in R\}$
   R: $\{c \mid 0 \le c < 40,\ c \in R\}$

   b) D: $\{n \mid 0 \le n \le 40,\ n \in R\}$
   R: $\{c \mid 8 \le c \le 44.80,\ n \in R\}$

   c) D: $\{x \mid 2 \le x \le 8,\ x \in R\}$
   R: $\{y \mid 1 \le y \le 7,\ y \in R\}$

   d) D: $\{x \mid x \in R\}$
   R: $\{y \mid y \in R\}$

   e) D: $\{x \mid x \ge -4,\ x \in R\}$
   R: $\{y \mid y \ge 0,\ y \in R\}$

   f) D: $\{x \mid -2 \le x \le 2,\ x \in R\}$
   R: $\{y \mid -5 \le y \le -1,\ y \in R\}$

   g) D: $\{x \mid x < 1,\ x \in R\}$
   R: $\{y \mid y < -1,\ y \in R\}$

   h) D: $\{x \mid x \in R\}$
   R: $\{y \mid y \le 7,\ y \in R\}$

3. a) D: $[0, 20)$
   R: $[0, 40)$

   b) D: $[0, 40]$
   R: $[8, 44.80]$

   c) D: $[2, 8]$
   R: $[1, 7]$

   d) D: $(-\infty, \infty)$
   R: $(-\infty, \infty)$

   e) D: $[-4, \infty)$
   R: $[0, \infty)$

   f) D: $[-2, 2]$
   R: $[-5, -1]$

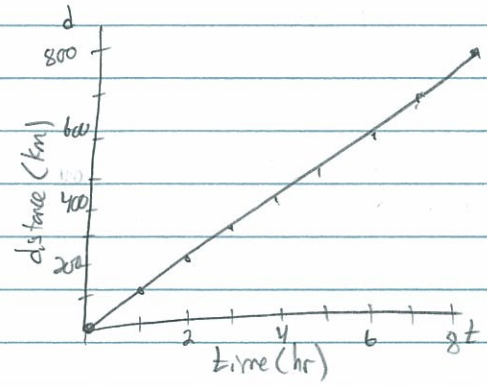
   g) D: $(-\infty, 1)$
   R: $(-\infty, -1)$

   h) D: $(-\infty, \infty)$
   R: $(-\infty, 7]$

4.

t(hr)	d(km)
0	0
1	100
2	200
3	300
4	400
⋮	
8	800

$d = 100t$

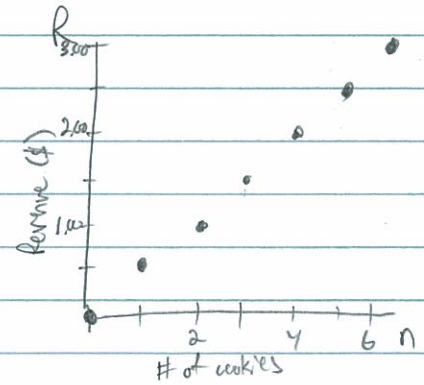


a) Independent var : time
b) Dependent var. : distance
c) distance depends on time
d) D: $\{t \mid 0 \le t \le 8, t \in R\}$
e) R: $\{d \mid 0 \le d \le 800, d \in R\}$
f) continuous

5.

n	R($)
0	0
1	0.50
2	1.00
3	1.50
4	2.00
5	2.50
6	3.00

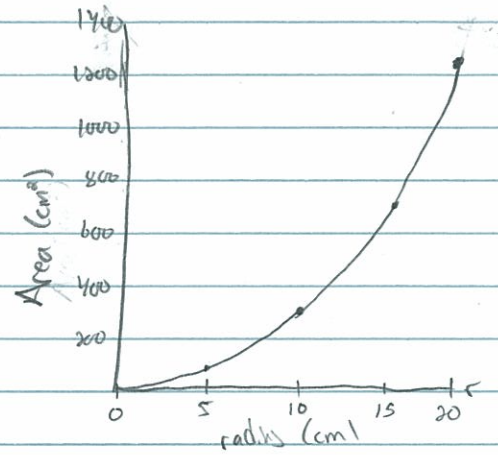
$R = 0.50n$



a) Independent var: # of cookies
b) Dependent var: Revenue
c) Revenue depends on # of cookies
d) D: $\{0, 1, 2, 3, 4, 5, 6\}$
e) R: $\{0, 0.50, 1.00, 1.50, 2.00, 2.50, 3.00\}$
f) discrete.

6.

r	A
0	0
1	3.14
2	12.57
3	28.27
4	50.27
5	78.54
⋮	
10	314.16
15	706.86
20	1256.64



a) Independent var: radius
b) Dependent var: Area
c) Area depends on radius
d) D: [0, 20]
e) R: [0, 1256.64]
f) Continuous

Math 10-C Graphing Relations **Name:** KEY

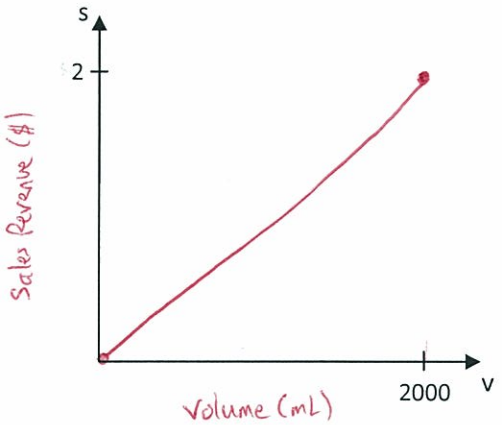
Domain & Range Notation

For each problem, draw a graph of the situation using the indicated domain. Then state the range using the same notation used for the domain.

1. You are selling lemonade at a price of \$0.25 / 250mL. Draw a graph of your sales revenue, s, based on the volume of lemonade sold, v, in mL.

Case #1

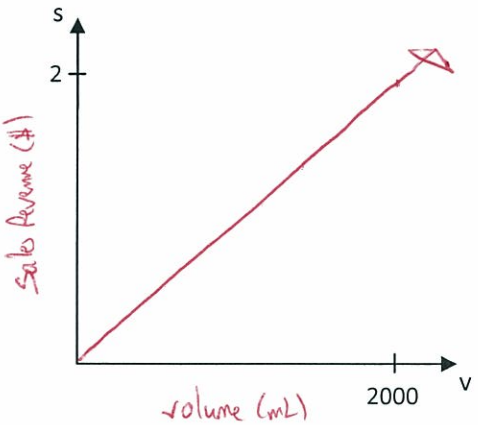
Domain: $\{v \mid 0 \le v \le 2000, v \in R\}$



Range: $\{s \mid 0 \le s \le 2, s \in R\}$

Case #2

Domain: $\{v \mid v \ge 0, v \in R\}$

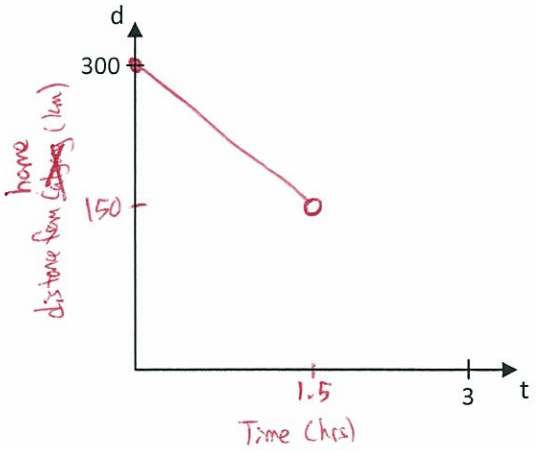


Range: $\{s \mid s \ge 0, s \in R\}$

2. Calgary is about 300km from your house. You are driving home from Calgary at a speed of 100 km/h. Draw a graph of your distance from home, d, in km based on the time spent travelling, t, in hours.

First Part of Trip

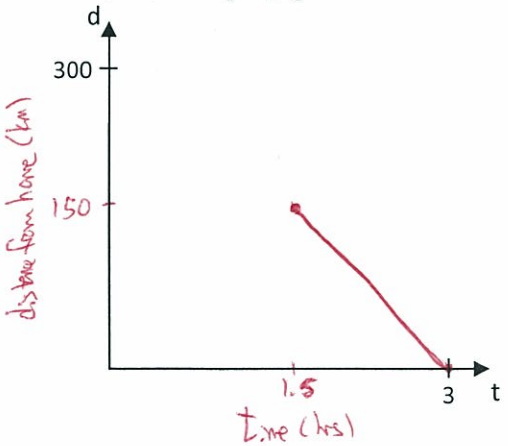
Domain: $[0, 1.5)$



Range: $(150, 300]$

Second Part of Trip

Domain: $[1.5, 3]$

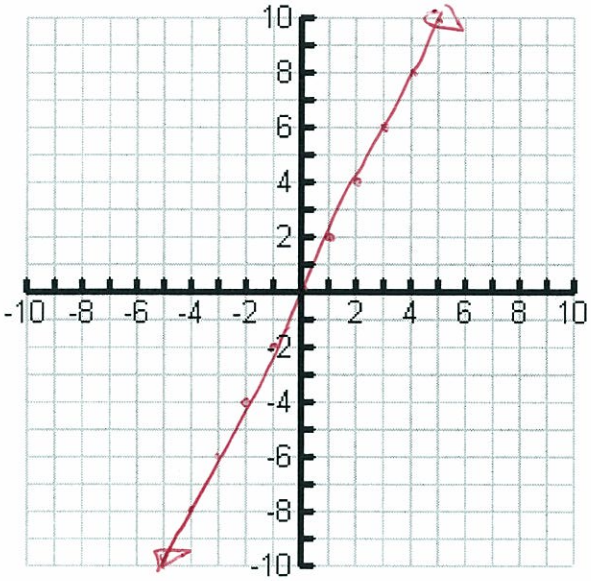


Range: $[0, 150]$

3. $y = 2x$

Case #1

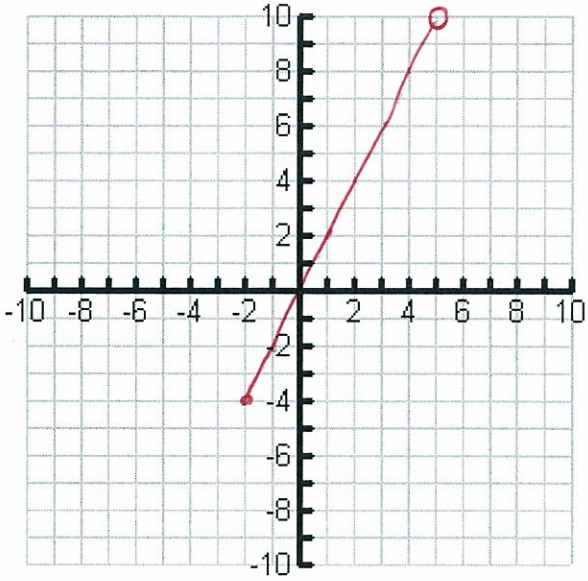
Domain: $\{x \mid x \in R\}$



Range: $\{y \mid y \in R\}$

Case #2

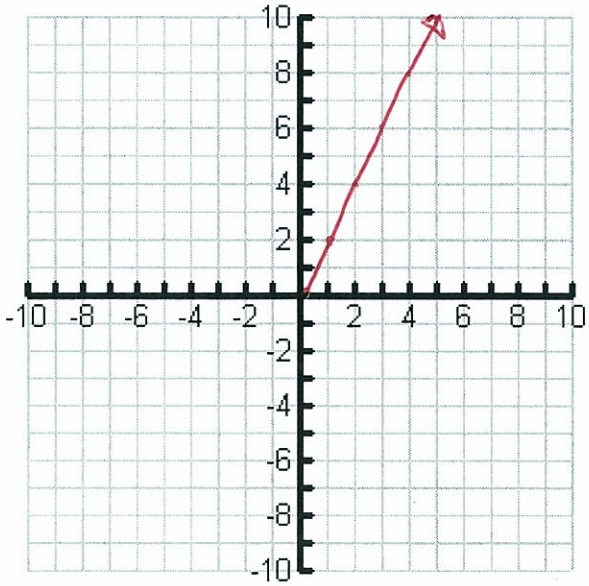
Domain: $[-2, 5)$



Range: $[-4, 10)$

Case #3

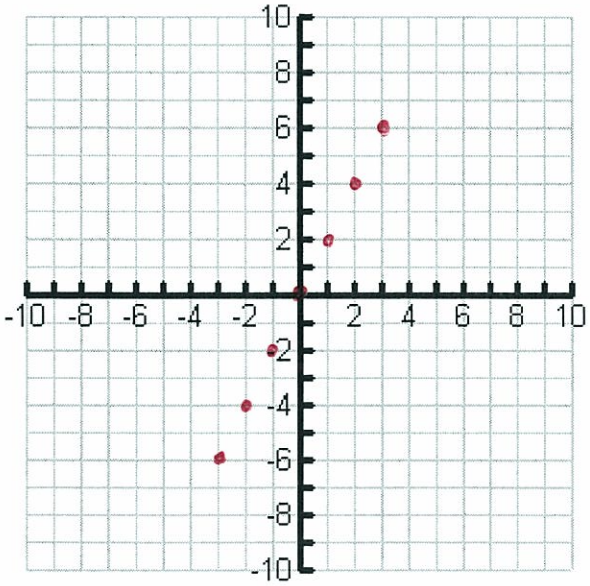
Domain: $[0, \infty)$



Range: $[0, \infty)$

Case #4

Domain: $\{-3, -2, -1, 0, 1, 2, 3\}$



Range: $\{-6, -4, -2, 0, 2, 4, 6\}$