

Section 1.2 Domain and Range

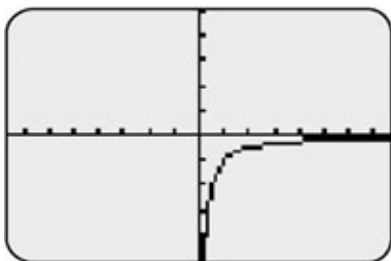
1. Write the domain and range for each relation.

a) $\{(-1, 1), (-2, 4), (-3, 9), (-4, 16)\}$

b) $f(x) = x^2 - 3$

c) $2x + y = 12$

d)



2. A rectangular field will be built using 200 m of fencing.

a) Create a table of values using the length of the field as the independent variable.

b) Draw a graph of Width versus Length.

c) Which describes your graph, a series of dots or a line segment? Explain.

d) Describe the domain and range in words.

e) Should the domain and range include 0? Explain.

f) How will the domain and range change if the length of the field must be at least 15 m and less than 25 m?

3. A ball is launched upward. Its height, h , in metres, t seconds after launching is modelled by $h = 18.2t - 4.9t^2$.

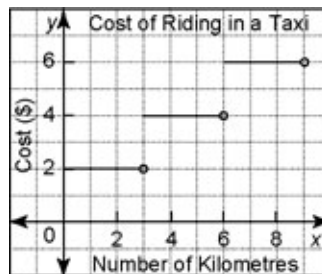
a) Create a table of values relating t and h .

b) From the table, find the maximum height of the ball.

c) From the table, determine how long the ball is in the air.

d) Write the domain and range for the function.

4. The graph shows the cost of riding in a taxi. The open dot at the end of a line segment means the point is not on the graph.



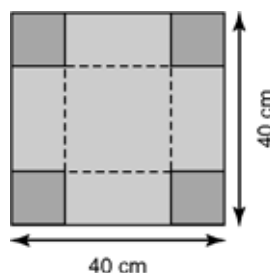
a) What is the cost of a 2.4-km taxi ride?

b) What is the cost of a 6-km taxi ride?

c) Explain why the graph represents a function.

d) Write the domain and range of the function.

5. Four squares are cut from the corners of a square that measures 40 cm by 40 cm. Each cut-out square has a side length that is a whole number of centimetres. The rectangular sides are folded up to form a box with a square base and an open top.



a) Create a table of values that relates the side length of the cut-out squares, in centimetres, and the volume of the box, in cubic centimetres.

b) What is the side length of the largest square that can be cut from a corner? Explain your thinking.

c) Write the domain of this relation.