Appendix

Lesson 6.1: Graphs of Relations

Practice – I

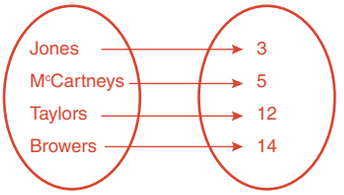
1. The following families spent time camping in Kananaskis over the summer months:

Family	Days
The Jones	3
The McCartneys	5
The Taylors	12
The Browers	14

a. Describe the relation in words.

The relation shows the number of days each family spent camping over the summer months.

b. Represent the relation using a mapping diagram.



2. Consider the relation represented by the set of ordered pairs shown.

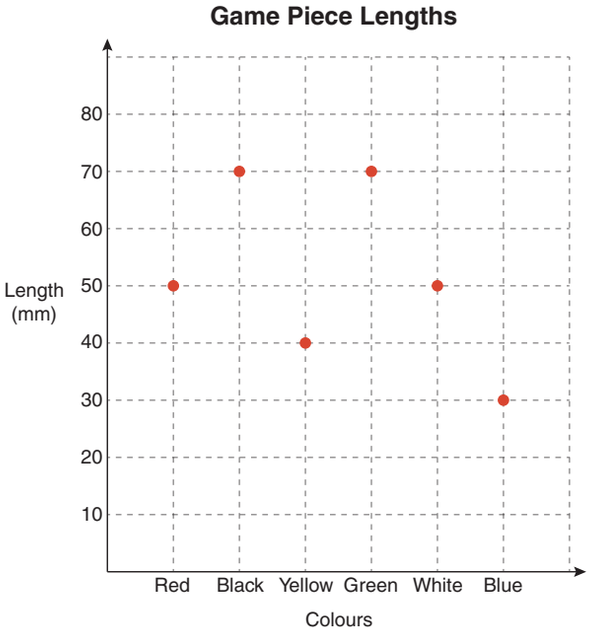
$\{(6,36),(7,42),(8,48),(9,54),(10,60)\}$

Describe the relation in words.

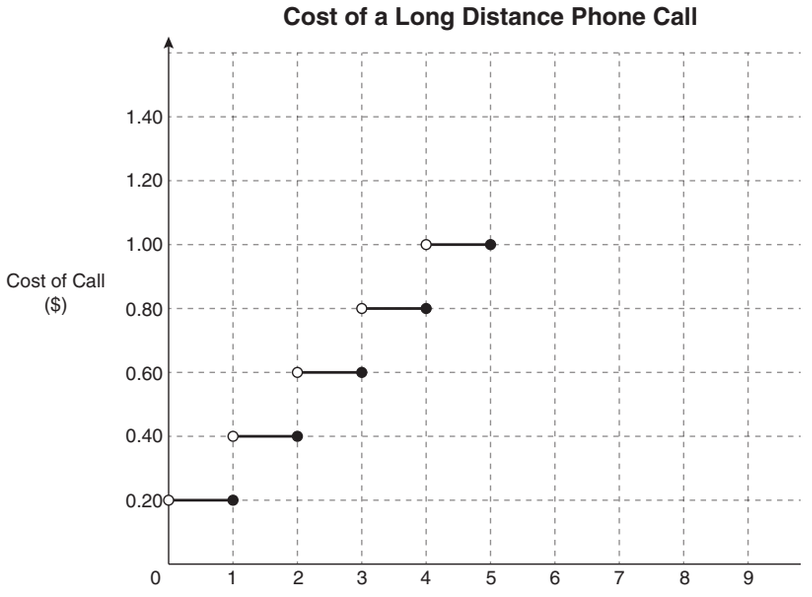
The relation shows as the x-value increases by 1 with a starting value of 6, the y-value increases by 6 with a starting value of 36.

3. Game pieces of various lengths are colour-coded. The length of each colour, in millimetres, is given in the table. Graphically represent the relation.

Colour	Measurement (mm)
Red	50
Black	70
Yellow	40
Green	70
White	50
Blue	30



4. The following graph shows how a cell phone company bills for air time on long distance calls.



The graph shows that the cell phone company charges $0.20 per minute or portion thereof. For instance, a 30 second phone call and a 45 second phone call will each get billed the $0.20 cost of a one minute call. The line segments on the graph are not connected because as each minute elapses there is an automatic cost increase to the call of $0.20.

The open dot on the left side of each line segment indicates the exclusion of that value, while the closed dot on the right side of each line segment indicates the inclusion of that value.

For example, the open dot at $x = 1$ and $y = \$0.40$ means that any phone call that it is **more than** one minute, but less than and **including** two minutes is $0.40.

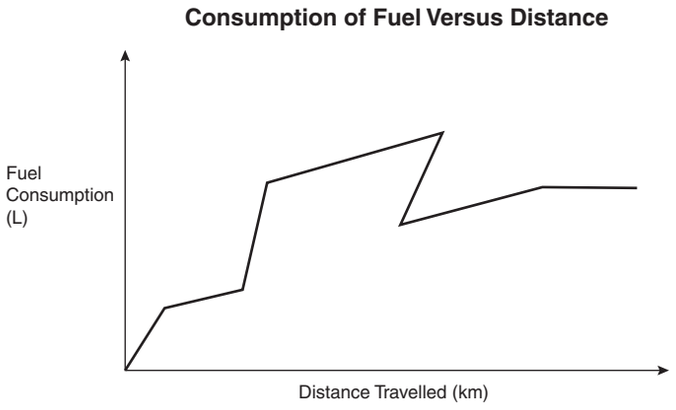
a. How much would it cost for a 4.25 minute long distance call?

It would cost $1.00 for a 4.25 minute call.

b. How much would it cost for a 9.5 minute long distance call?

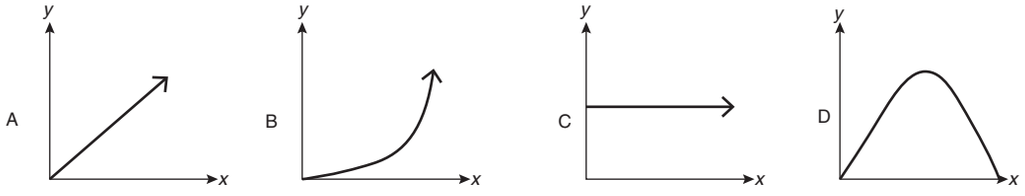
It would cost $2.00 for a 9.5 minute call.

5. Explain why the graph below represents an impossible situation.



Several points on the graph (an entire segment) suggest that the distance travelled can be reversed, while the fuel consumption is simultaneously decreasing – this is impossible.

6. Match the graphs with the scenario statements below. Place the letter of the graph beside the most suitable description. Scenarios can match more than once.



A The distance a car travels at a constant speed.

B The number of bacteria if the colony's population doubles every two hours.

D The height of a ball when thrown into the air.

A One variable is changing at a constant rate in relation to the other variable.

C One variable is not changing.

C The distance travelled while stuck in a snow bank.

Please complete *Lesson 6.1 Explore Your Understanding Assignment* located in *Workbook 6.1* before proceeding to *Lesson 6.2*.