Practice

1. a) This table shows the cost to rent a canoe.
How much would it cost to rent a canoe for each time?
i) 2 days ii) 4 days
How did you find out?

Time (days)	0	1	3	5
Cost ($)	0	24	72	120

b) This table shows the earnings from ticket sales.
How much is earned from the sale of each number of tickets?
i) 10 ii) 30 iii) 50
How did you find out?

Tickets sold	0	20	40	60
Earnings ($)	0	160	320	480

2. These data were recorded for a cheetah chasing prey.

Time (s)	0	5	10	15	20
Distance (m)	0	105	210	315	420

a) Graph the data.
b) Use the graph to determine how long it takes the cheetah to run 400 m.
c) About how long will it take the cheetah to run 500 m?
What assumption did you make?
d) Write an equation to determine the distance, d metres, after t seconds.
e) Use the equation to determine how long it will take the cheetah to run 400 m and 500 m. How do your answers compare to those in parts b and c?
Which method did you prefer? Explain.

We can also find values for a linear relation that represents partial variation.

Example

A candle is 13 cm long.
It is lit and it burns at the rate of 0.2 cm/min.
a) Write an equation for the height, H centimetres, of the candle after time, t minutes.
b) How long does it take until the candle is 10 cm high?

Solution

a) The rule is:
Candle height = initial height − (rate of change × time)
The range of change is 0.2 cm/min.
So, the equation is:
$H = 13 - (0.2 \times t)$, or
$H = 13 - 0.2t$