Simple direct proportion y = kx

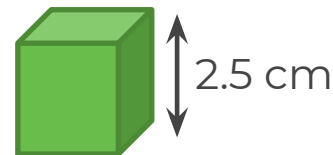Mr Clasper

Simple direct proportion y = kx

1. A burger costs £3

a)   How much do 2 burgers cost?

b)   How much do 5 burgers cost?

c)   How much do 7 burgers cost?

d)   Ina spends £12 on some burgers.

       How many does she buy?

e)   How much do x burgers cost?

2. Cubes are stacked to make towers.

Each cube is 2.5 cm tall.

a) Complete the table

Number of cubes	2	4	5	11	
Height of tower (cm)					50

b) Explain why this shows a direct proportion relationship.

Simple direct proportion y = kx

3. Y is directly proportional to X
Given Y is 20 when X = 4

a) Find a formula connecting X and Y

b) Find the value of Y when X = 7

c) Find the value of X when Y = 30

d) Sketch a graph to show the

relationship between X and Y

4. The time, t, is takes to print a book is directly proportional to the number of pages, P, in the book.

A book with 200 pages takes 10 minutes.

a) How long does it take to print a book with 360 pages?

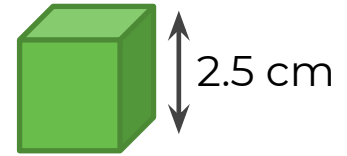b) It takes 7.5 minutes to print another book. How many pages does the book have?

Answers

Simple direct proportion y = kx

1. A burger costs £3

a) How much do 2 burgers cost? £6

b) How much do 5 burgers cost? £15

c) How much do 7 burgers cost? £21

d) Ina spends £12 on some burgers.

   How many does she buy? 4

e) How much do x burgers cost? 3x

2. Cubes are stacked to make towers.

Each cube is 2.5 cm tall.

2.5 cm

a) Complete the table

Number of cubes	2	4	5	11	20
Height of tower (cm)	5	10	12.5	27.5	50

b) Explain why this shows a direct proportion relationship.

It is of the form y = kx where k = 2.5
Every time a cube is added, the height is increased by 2.5

Simple direct proportion y = kx

3. Y is directly proportional to X

Given Y is 20 when X = 4

a) Find a formula connecting X and Y

Y = 5X
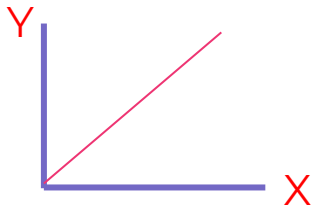
b) Find the value of Y when X = 7

Y = 35

c) Find the value of X when Y = 30

X = 6

d) Sketch a graph to show the relationship between X and Y

4. The time, t, is takes to print a book is directly proportional to the number of pages, P, in the book.

A book with 200 pages takes 10 minutes.

a) How long does it take to print a book with 360 pages?

t = 0.05P

t = 18 minutes

b) It takes 7.5 minutes to print another book. How many pages does the book have?

P = 150 pages