

1. Copy and complete the table using the proportionality given:

(a) $y \propto x$

x	1	3	5
y	5		

(b) $a \propto b$

a	2	7	11
b		21	

(c) $y \propto \frac{1}{x}$

x	0.5	1	2
y	10		

(d) $u \propto \frac{1}{v}$

u	2	3	4
v	12		

(e) $y \propto x^2$

x	2		6
y	24	54	

(f) $y \propto \frac{1}{x^2}$

x	0.5	1	2
y	8		

2. The crop c of potatoes is directly proportional to the amount of fertiliser f used.

It is found that 50kg of potatoes are produced from 4kg of fertiliser.

(a) write an equation relating c to f

(b) what is the expected crop when 10kg of fertiliser are used

(c) how much fertiliser would be needed to produce a crop of 120kg of potatoes

3. An elastic band stretches uniformly when a force is applied to it.

A force of 20 Newtons produces an increase in length of 4 cm.

(a) what force will produce an increase in length of 7.5 cm?

(b) what increase in length will be produced by a 17 Newton force?

4. It is believed that the value of a car is inversely proportional to its age.

(a) if the value of a car is £3000 at one year old, what is its value when it is 3 years old?

(b) how old will the car be when it has reached a value of £500?

1.

(a) $y \propto x$

x	1	3	5
y	5	15	25

(b) $a \propto b$

a	2	7	11
b	6	21	33

(c) $y \propto \frac{1}{x}$

x	0.5	1	2
y	10	5	2.5

(d) $u \propto \frac{1}{v}$

u	2	3	4
v	12	8	6

(e) $y \propto x^2$

x	2	3	6
y	24	54	216

(f) $y \propto \frac{1}{x^2}$

x	0.5	1	2
y	8	2	0.5

2.

(a) $c = 12.5f$

(b) 125kg

(c) 9.6kg

3.

(a) 37.5 Newtons

(b) 3.4 cm

4.

(a) £1000

(b) 6 years old