## Algebra - proportion proportion question sheet A-F-01

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

(a)	y	$\infty$	$\boldsymbol{x}$
(/			

X	1	3	5
Meyth	5	ora v	WW.

(b) 
$$a \propto b$$

а	2	7	11
b		21	

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

	(c) $v \propto \frac{1}{-}$		х	0.5	1	2	
	$\mathcal{X}_{-}$		y	10			
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(d) 
$$u \propto \frac{1}{v}$$

и	2	3	4
v	12	SF M	aths

(e) 
$$y \propto x^2$$

х	2		6
ray W	24/_0	54	naths

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

X	0.5	1	2
7G y S	8 0 1	ns II	ITOTA

- 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?

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(a) 
$$y \propto x$$

(a) $y \propto x$	X	1	3	5	
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(b) 
$$a \propto b$$

a	а	2	7	11	
(b) $a \propto b$	b	6	21	33	
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# (c) $y \propto \frac{1}{x}$

(c) $v \propto \frac{1}{x}$	X	0.5	1	2	
$\boldsymbol{x}$	y	10	5	2.5	
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(d) 
$$u \propto \frac{1}{u}$$

Ī	и	2	3	4	
	v	12	8 V	6	

(e) 
$$y \propto x^2$$

(a) 21 co 22 <sup>2</sup>	X	2	3	6	
(e) $y \propto x^2$	ray W	24/_0	54	216	tutor.com

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

(f) $y \propto \frac{1}{x^2}$	X	0.5	1	2
	Gys	_ 8 = 1	2	0.5

(a) 
$$c = 12.5 f$$
 (b)  $125 kg$  (c)  $9.6 kg$ 

- (a) 37.5 Newtons
  - (b) 3.4 cm
- GC(a) £1000 aths Tutor~ www.gcsemathstutor.c
  - (b) 6 years old