

KS3 – Proportion – Answers

Section A – Direct Proportion

Q1

- a) Multiply
- b) Constant
- c) Example: number of identical items and total cost, when the price per item is fixed.

Q2

- a) £14
- b) £19.20
- c) 56 parts
- d) £45

Q3

- a) £84.50
- b) 15 litres
- c) 252 miles

Q4

- a) 40
- b) 48
- c) 13

Q5

- a) Yes; $y \div x = 2.5$ each time.
- b) No; $y \div x$ is not constant.
- c) Yes; $y \div x = 1.75$ each time.

Q6

- a) $y = 3x$
- b) $y = 7x$
- c) $y = 0.8x$

Q7

Constant of proportionality = $30 \div 12 = 2.5$.

$$47.5 = 2.5x$$

$$x = 19.$$

Section B – Inverse Proportion

Q8

- a) Halve
- b) Constant
- c) Example: number of equally efficient workers and time taken to complete a fixed job.

Q9

- a) 8 hours
- b) 12 minutes
- c) 4 hours
- d) 10 hours

Q10

- a) 4
- b) 8
- c) 28

Q11

- a) Yes; $xy = 48$ each time.
- b) No; xy is not constant.
- c) Yes; $xy = 80$ each time.

Q12

- a) $y = 60/x$
- b) $y = 60/x$
- c) $y = 200/x$

Q13

- a) 10 days
- b) 21 hours
- c) 90 km/h

Q14

Constant product = $7.5 \times 16 = 120$.

$$6x = 120$$

$$x = 20.$$