GCSE FOUNDATION · REVISION MAT 5

Direct and inverse proportion

1 8 pencils cost £5.20.

Work out the cost of 5 pencils.

2 A recipe for 3 people uses 270 g of sugar.

How much sugar is needed for 7 people?

3 It takes 2 builders 15 days to build a wall.

Eli says it will take 6 builders 45 days.

Explain why Eli is wrong.

4 Here are some values of x and y.

x	2	6	9
y	9	27	42

Is y directly proportional to x?
Show how you decide.

5 £1 = $1.28

A pair of trainers costs $64 in New York and £49 in London.

In which city is it cheaper? Show your working.

6 6 pumps can empty a pool in 4 hours.

All the pumps work at the same rate.

(a) How long would it take 8 pumps?

(b) How many pumps are needed to empty the pool in 3 hours?

Mr&Mrs MATHS

ANSWERS · REVISION MAT 5

Direct and inverse proportion

1 One costs £5.20 ÷ 8 = £0.65

5 cost **£3.25**

2 270 ÷ 3 × 7 = **630 g**

3 More builders means **less** time (inverse proportion).

2 × 15 = 30 builder-days

30 ÷ 6 = **5 days**

4 9 ÷ 2 = 4.5 , 27 ÷ 6 = 4.5 , 42 ÷ 9 = 4.66667

No, $y \div x$ is not always the same.

5 $64 ÷ 1.28 = £50.00

London is cheaper.

6 Total: 6 × 4 = 24 pump-hours

(a) 24 ÷ 8 = **3 hours**

(b) 24 ÷ 3 = **8 pumps**