GCSE FOUNDATION · REVISION MAT 4

Direct and inverse proportion

1 3 notebooks cost £2.85.

Work out the cost of 7 notebooks.

2 A recipe for 8 people uses 640 g of pasta.

How much pasta is needed for 6 people?

3 It takes 6 builders 8 days to build a wall.

Dee says it will take 12 builders 16 days.

Explain why Dee is wrong.

4 Here are some values of x and y.

x	5	8	15
y	16	25.6	48

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

5 £1 = $1.20

Some headphones costs $150 in New York and £122 in London.

In which city is it cheaper? Show your working.

6 5 pumps can empty a pool in 6 hours.

All the pumps work at the same rate.

(a) How long would it take 6 pumps?

(b) How many pumps are needed to empty the pool in 2 hours?

Mr&Mrs MATHS

ANSWERS · REVISION MAT 4

Direct and inverse proportion

1 One costs £2.85 ÷ 3 = £0.95

7 cost **£6.65**

2 640 ÷ 8 × 6 = **480 g**

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

6 × 8 = 48 builder-days

48 ÷ 12 = **4 days**

4 16 ÷ 5 = 3.2 , 25.6 ÷ 8 = 3.2 , 48 ÷ 15 = 3.2

Yes, $y \div x$ is always the same.

5 $150 ÷ 1.20 = £125.00

London is cheaper.

6 Total: 5 × 6 = 30 pump-hours

(a) 30 ÷ 6 = **5 hours**

(b) 30 ÷ 2 = **15 pumps**