GCSE FOUNDATION · REVISION MAT 3

Direct and inverse proportion

1 6 rolls cost £4.50.

Work out the cost of 14 rolls.

2 A recipe for 5 people uses 200 g of butter.

How much butter is needed for 12 people?

3 It takes 5 builders 12 days to build a wall.

Cal says it will take 10 builders 24 days.

Explain why Cal is wrong.

4 Here are some values of x and y.

x	4	7	12
y	10	17.5	30

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

5 £1 = $1.30

A book costs $26 in New York and £21 in London.

In which city is it cheaper? Show your working.

6 4 pumps can empty a pool in 6 hours.

All the pumps work at the same rate.

(a) How long would it take 3 pumps?

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

Mr&Mrs MATHS

ANSWERS · REVISION MAT 3

Direct and inverse proportion

1 One costs £4.50 ÷ 6 = £0.75

14 cost **£10.50**

2 200 ÷ 5 × 12 = **480 g**

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

5 × 12 = 60 builder-days

60 ÷ 10 = **6 days**

4 10 ÷ 4 = 2.5 , 17.5 ÷ 7 = 2.5 , 30 ÷ 12 = 2.5

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

5 $26 ÷ 1.30 = £20.00

New York is cheaper.

6 Total: 4 × 6 = 24 pump-hours

(a) 24 ÷ 3 = **8 hours**

(b) 24 ÷ 3 = **8 pumps**