Direct proportion: worded problems

Exit ticket ANSWERS Name _____

1. The cost, C pounds, of hiring a boat is directly proportional to the time, t hours. 4 hours cost £36. Find a formula for C in terms of t.

   $C = 9t$

2. The mass, m grams, of a chain is directly proportional to its length, L cm. 6 cm of chain has a mass of 42 g. Find the mass of 15 cm of chain.

   105 g

3. Pay, P pounds, is directly proportional to the hours worked, h. 4 hours pay £50. How many hours pay £87.50?

   7 hours

The Maths Habit

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TESTS The formula from the 1 row: k is the amount for 1

LOOK FOR

$C = 36t$ used the cost of 4 hours, not 1 hour

$C = t \div 9$ divided the hours by the cost: k upside down

FIX IT

The cost, C pounds, of hiring skates is directly proportional to the time, t hours. 3 hours cost £15. Find a formula for C in terms of t. $C = 5t$

2 **The mass, m grams, of a chain is directly proportional to its length, L cm. 6 cm of chain has a mass of 42 g. Find the mass of 15 cm of chain.**

105 g

TESTS Using the formula forwards

LOOK FOR

51 g added 9 g for the 9 cm more

252 g multiplied 42 by the 6 cm

FIX IT

The mass, m grams, of a rope is directly proportional to its length, L metres. 4 m of rope has a mass of 48 g. Find the mass of 10 m. 120 g

3 **Pay, P pounds, is directly proportional to the hours worked, h. 4 hours pay £50. How many hours pay £87.50?**

7 hours

TESTS Working backwards: the answer given, the amount found by dividing by k

LOOK FOR 1093.75 hours multiplied £87.50 by k instead of dividing

FIX IT

The cost, C pounds, of turf is directly proportional to its area, A m^2. 3 m^2 cost £18. What area of turf can you buy for £45? 7.5 m^2