HIGHER

2.5 Direct and Inverse Proportion With Non-Linear Powers: 10-minute Pack

EDEXCEL 4MA1 · Calculator allowed · about 10 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer all questions. Full sentences are required in 2 questions (where an explanation is asked). Allow 10 minutes.

1 y is directly proportional to the square root of x. When x = 64, y = 48.
Find the positive value of x when y = 18.

(Total for Question 1 is 4 marks)

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2 W is directly proportional to the square of h. When h = 6, W = 72.
Find the value of W when h = 5.

(Total for Question 2 is 4 marks)

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Mark scheme · 2.5 Direct and Inverse Proportion With Non-Linear Powers: 10-minute Pack

Question 1

writes $y = k\sqrt{x}$ and substitutes to find k	**M1**
$k = 6$	**A1**
substitutes $y = 18$ into $y = 6\sqrt{x}$ and rearranges for x	**M1**
$x = 9$ cao	**A1**

Answer: x = 9

Question 2

writes the relationship as $W = kh^2$	**M1**
substitutes $h = 6$, $W = 72$ to find k	**M1**
$k = 2$, so $W = 2h^2$	**A1**
$W = 50$ when $h = 5$	**A1**

Answer: W = 50

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