Test - Ratio, proportion and percentage change

Year: Year 10 · Duration: 45 minutes · /20

Name:	Date:	**Mark: /20**

Question	1	2	3	4	5	Total
marks	4	4	4	4	4	**20**
Mark						

Show your working.

Question 1 (4 marks)

Question 1 – Ratio

Non-calculator.

a. Write $45 : 60$ in its simplest form. (1 mark)
b. Share £360 in the ratio $2 : 3 : 7$. (3 marks)

Question 2 (4 marks)

Question 2 – Proportion and best buys

Calculator allowed.

a. 5 kg of potatoes cost £3.40. Work out the cost of 8 kg. (2 marks)
b. A 400 g jar of jam costs £1.60 and a 650 g jar costs £2.47. Which is better value? Show your working. (2 marks)

Question 3 (4 marks)

Question 3 – Maps and scale

A map has scale $1 : 50\,000$.

a. Two towns are 7.2 cm apart on the map. Find the real distance in km. (2 marks)
b. A road is 18 km long. How long is it on the map in cm? (2 marks)

Question 4 (4 marks)

Question 4 – Percentage change

Calculator allowed.

a. A laptop costs £480 plus 20% VAT. Work out the total price. (1 mark)

b. A sofa is reduced by 30% in a sale and now costs £525. Work out the original price. (2 marks)
c. A number is increased by 12% and then decreased by 12%. Show that the result is smaller than the original. (1 mark)

Question 5 (4 marks)

Question 5 – Problem: ratio and algebra

The ages of two cousins are in the ratio $4 : 7$. The older cousin is 12 years older than the younger.

a. Let the ages be $4k$ and $7k$. Form an equation and solve it. (2 marks)
b. Find the two ages. (1 mark)
c. In how many years will the ratio of their ages be $5 : 8$? (1 mark)