2.1 Calculation Problems: 30-minute Pack

EDEXCEL 1MA1 · Calculator allowed · about 30 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 A recipe uses 350 g of flour to make 4 portions. Work out how much flour is needed for 7 portions.

(Total for Question 1 is 3 marks)

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2 A photographer charges a base fee of £45 plus £12 per hour. Noah hires the photographer for 3.5 hours.

(a) Work out the total cost. **(2)**

.....

(b) Work out the average cost per hour, correct to the nearest penny. **(2)**

.....

(Total for Question 2 is 4 marks)

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3 A jumper is reduced by 15% in a sale. The original price is £48. Work out the sale price of one jumper, then the total cost of buying 3 jumpers at the sale price.

(Total for Question 3 is 3 marks)

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4 After a 12% pay rise, Priya's new weekly wage is £392. Work out her original weekly wage, before the rise.

(Total for Question 4 is 3 marks)

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5 A rectangle has length 3 times its width. The perimeter of the rectangle is 96 cm.

Diagram NOT accurately drawn



(a) Find the width and the length. **(2)**

.....

(b) Work out the area of the rectangle. **(2)**

.....

(Total for Question 5 is 4 marks)

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6 Callum's car uses 9 litres of fuel to travel 150 km. At this rate, how many litres will he use to travel 350 km? Then work out the cost of that fuel if fuel costs £1.45 per litre.

(Total for Question 6 is 4 marks)

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7 A school has a budget of £12,500. They spend 18% of the budget on books and £2,350 on equipment. The remaining money is to be shared equally between 5 departments. Work out how much each department receives.

(Total for Question 7 is 4 marks)

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Mark scheme · 2.1 Calculation Problems: 30-minute Pack

Question 1

finds flour per portion: 350 ÷ 4	**M1**
multiplies by 7 to scale up (method)	**M1**
612.5 g cao	**A1**

Answer: 612.5 g. Working check: 350 ÷ 4 = 87.5 g per portion; 87.5 × 7 = 612.5 g.

Question 2

(a) calculates 45 + 12 × 3.5	**M1**
(a) £87.00 cao	**A1**

(a) Answer: £87.00

(b) divides total cost by 3.5 correctly	**M1**
(b) £24.86 cao (rounded to nearest penny)	**A1**

(b) Answer: £24.86 per hour (to nearest penny).

Question 3

finds 15% of £48 and subtracts to get sale price	**M1**
multiplies sale price by 3 (method)	**M1**
£122.40 cao	**A1**

Answer: Sale price = £40.80; cost of 3 = £122.40. Working check: 15% of 48 = 7.20 so sale price 48 - 7.20 = 40.80; 40.80 × 3 = 122.40.

Question 4

recognises £392 represents 112% of the original wage (oe, e.g. sets up 1.12 x w = 392)	**M1**
divides 392 by 1.12 (method)	**M1**
£350 cao	**A1**

Answer: £350. Working check: 350 x 1.12 = 392.

Question 5

(a) forms equation 2(3w + w) = 96 or 8w = 96	**M1**
(a) width = 12 cm and length = 36 cm cao	**A1**

(a) Answer: width 12 cm, length 36 cm

(b) uses area = length × width	**M1**
(b) 432 cm² cao	**A1**

(b) Answer: 432 cm^2

Question 6

finds litres per km: 9 ÷ 150	**M1**
uses rate to find litres for 350 km	**M1**
multiplies litres by £1.45 to find cost	**M1**
£30.45 cao	**A1**

Answer: 21 litres and £30.45. Working check: 9 ÷ 150 = 0.06 L/km; 0.06 × 350 = 21 L; 21 × 1.45 = 30.45.

Question 7

finds cost of books: 18% of 12,500	**M1**
subtracts books and equipment from budget to find remainder	**M1**
divides remainder by 5 to share equally	**M1**
£1,580 per department cao	**A1**

Answer: £1,580 each. Working check: 18% of 12,500 = 0.18 × 12,500 = 2,250; remaining = 12,500 - 2,250 - 2,350 = 7,900; 7,900 ÷ 5 = 1,580.

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