



EP.M148 CEM Style Maths Mixed Section 3

CEM CEM-11PLUS-MOCK · Calculators not allowed · about 55 minutes

Total Marks

Name: _____ Date: ____ / ____ / ____

Answer ALL questions. Show all your working.

1 What is 48% of 50?

(Total for Question 1 is 1 mark)

2 A recipe needs $\frac{7}{8}$ of a teaspoon of spice. How much spice is needed if you make 64 portions?

(Total for Question 2 is 1 mark)

3 Calculate $125 + 37 - 62$.

(Total for Question 3 is 1 mark)

4 A train leaves at 09:15 and the journey takes 2 hours 40 minutes. At what time does it arrive?

(Total for Question 4 is 2 marks)

5 A carton holds 1.8 litres of juice. How many full cartons are needed to have at least 10 litres?

(Total for Question 5 is 2 marks)

6 What is 15% of 260?

(Total for Question 6 is 1 mark)

7 Four people share the cost of a taxi fare of £48 equally. How much does each person pay?

(Total for Question 7 is 2 marks)

8 A square field has area 144 m^2 . What is the length of one side of the field in metres?

(Total for Question 8 is 2 marks)

9 What is 3.6 divided by 0.6?

(Total for Question 9 is 1 mark)

10 A shop reduces a £120 jacket by 15%. What is the sale price?

(Total for Question 10 is 2 marks)

11 Write 0.375 as a fraction in its simplest form.

(Total for Question 11 is 1 mark)

12 A rectangle measures 7 cm by 2.5 cm. Calculate its perimeter.

(Total for Question 12 is 2 marks)

- 13** A baker needs $\frac{3}{5}$ of a kilogram of flour for one batch. How much flour is needed for 8 batches?

(Total for Question 13 is 2 marks)

- 14** A bus travels 150 kilometres in 2 hours 30 minutes. What is its average speed in km/h? Give your answer to 1 decimal place.

(Total for Question 14 is 2 marks)

- 15** If $x = 6$, find the value of $2x + 5$.

(Total for Question 15 is 2 marks)

- 16** A bottle costs £3.60. A 2 for 1 deal means buy one get one free. How much would three bottles cost at this offer?

(Total for Question 16 is 2 marks)

- 17** What is the next prime number after 23?

(Total for Question 17 is 1 mark)

- 18** A rope is cut into lengths in the ratio 2:3:5. If the shortest piece is 6 m, what is the total length of the rope?

(Total for Question 18 is 2 marks)

- 19** A school has 240 pupils. The ratio of boys to girls is 7:5. How many girls are there? Show your working.

(Total for Question 19 is 5 marks)

- 20** A charity collects money in two boxes. Box A contains £150, which is 60% of the total collected. How much is in Box B? Show all steps.

(Total for Question 20 is 6 marks)

Mark scheme · EP.M148 CEM Style Maths Mixed Section 3

Question 1

- **B1** 24 cao
- **Answer: 24**

Question 2

- **B1** 56 cao
- **Answer: 56 teaspoons**

Question 3

- **B1** 100 cao
- **Answer: 100**

Question 4

- **M1** Add 2 hours to 09:15 and add 40 minutes (method) seen
- **A1** 11:55 cao
- **Answer: 11:55**

Question 5

- **M1** Divide 10 by 1.8 or equivalent method to find 5.555... seen
- **A1** 6 cartons cao
- **Answer: 6 cartons**

Question 6

- **B1** 39 cao
- **Answer: 39**

Question 7

- **M1** Correct division $48 \div 4$ seen
- **A1** £12.00 cao
- **Answer: £12.00**

Question 8

- **M1** Method to take square root of 144 seen
- **A1** 12 m cao
- **Answer: 12 m**

Question 9

- **B1** 6 cao
- **Answer: 6**

Question 10

- **M1** Find 15% of 120 or show 0.15×120 seen
- **A1** £102.00 cao
- **Answer: £102.00**

Question 11

- **B1** $\frac{3}{8}$ cao
- **Answer: $\frac{3}{8}$**

Question 12

- **M1** Method $2 \times (7 + 2.5)$ or equivalent seen
- **A1** 19 cm cao
- **Answer: 19 cm**

Question 13

- **M1** Multiply $\frac{3}{5}$ by 8 shown ($\frac{3}{5} \times 8 = \frac{24}{5}$)
- **A1** $4 \frac{4}{5}$ kg or 4.8 kg cao
- **Answer: $4 \frac{4}{5}$ kg (4.8 kg)**

Question 14

- **M1** Convert time to hours (2.5 h) and set up division $150 \div 2.5$
- **A1** 60.0 km/h cao
- **Answer: 60.0 km/h**

Question 15

- **M1** Substitute $x = 6$ into expression seen
- **A1** 17 cao
- **Answer: 17**

Question 16

- **M1** Recognise paying for 2 bottles when getting one free or method showing 3 bottles cost 2×3.60
- **A1** £7.20 cao
- **Answer: £7.20**

Question 17

- **B1** 29 cao
- **Answer: 29**

Question 18

- **M1** Find the value of one part: 2 parts = 6 so 1 part = 3
- **A1** Total 10 parts = 30 m cao
- **Answer: 30 m**

Question 19

- **M1** Method to add parts $7 + 5 = 12$ or show consideration of total parts seen
- **M1** Method to divide 240 by 12 to find one part ($240 \div 12 = 20$) seen
- **M1** Method to multiply one part by 5 to get girls (20×5) seen
- **A1** 100 cao
- **B1** Alternative fully correct method e.g. $240 \times \frac{5}{12} = 100$ ft
- **Answer: 100 girls**

Question 20

- **M1** Method to express 150 as 60% of total or write equation $0.6T = 150$
- **M1** Method to divide 150 by 0.6 or equivalent to find total $T = 250$
- **M1** Method to find amount in B by subtracting 150 from total or using 40% seen
- **A1** £100 cao
- **M1** Alternative method: find 10% = 25 then 40% = 100 shown
- **A1** Final answer consistent: £100 cao
- **Answer: £100**