EP.M116 Volume and Capacity of Cuboids

GL ASSESSMENT GL-11PLUS-MATHS · Calculators not allowed · about 55 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 What is the volume of a cuboid that measures 5 cm by 4 cm by 3 cm?

- ☐ A) 12 cm3
- ☐ B) 60 cm3
- ☐ C) 15 cm3
- ☐ D) 45 cm3
- ☐ E) 300 cm3

(Total for Question 1 is 1 mark)

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2 Convert 2,500 cm3 to litres.

- ☐ A) 0.25 L
- ☐ B) 2.5 L
- ☐ C) 25 L
- ☐ D) 250 L
- ☐ E) 0.025 L

(Total for Question 2 is 1 mark)

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3 A box has volume 360 cm3. Two of its internal sides measure 6 cm and 5 cm. Work out the length of the third side.

(Total for Question 3 is 2 marks)

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4 An empty fish tank measures inside 80 cm by 30 cm by 40 cm. What is its capacity in litres?

- ☐ A) 9.6 L
- ☐ B) 96 L
- ☐ C) 960 L
- ☐ D) 0.096 L
- ☐ E) 9600 L

(Total for Question 4 is 1 mark)

5 A rectangular container holds 2,400 ml of liquid. Its base measures 30 cm by 20 cm. Work out the height of the container in centimetres.

(Total for Question 5 is 2 marks)

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6 A cuboid measures 0.5 m by 40 cm by 20 cm. What is its volume in litres?

- ☐ A) 4 L
- ☐ B) 40 L
- ☐ C) 400 L
- ☐ D) 0.4 L
- ☐ E) 4000 L

(Total for Question 6 is 1 mark)

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7 A cuboid cake tin measures 14 cm by 5 cm by 6 cm. Water is poured in at a rate of 60 ml per minute. How many minutes will it take to fill the tin completely?

(Total for Question 7 is 1 mark)

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8 A storage box measures 25 cm by 12 cm by 10 cm and is completely filled with packing foam.

(a) Work out the volume of the box in cubic centimetres. **(1)**

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(b) Express this volume in litres. **(1)**

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(c) If foam is produced at a rate of 250 ml per second, how many seconds are needed to fill the box? **(2)**

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(Total for Question 8 is 4 marks)

9 Which cuboid has the largest volume?

Compare these five cuboids and choose the largest by volume.

(Total for Question 9 is 1 mark)

Mark scheme · EP.M116 Volume and Capacity of Cuboids

Question 1

- **B1** correct option B (60 cm3) cao
- **Answer: B) 60 cm3 (5 x 4 x 3 = 60 cm3). If a pupil multiplied incorrectly or omitted a factor they might get other options.)**

Question 2

- **B1** correct option B (2.5 L) cao
- **Answer: B) 2.5 L (2,500 cm3 = 2,500 ml = 2.5 litres).**

Question 3

- **M1** attempt to divide volume by product of two given sides: 360 ÷ (6 x 5) seen
- **A1** 12 cm cao
- **Answer: 12 cm (360 ÷ (6 x 5) = 360 ÷ 30 = 12 cm).**

Question 4

- **B1** correct option B (96 L) cao
- **Answer: B) 96 L (80 x 30 x 40 = 96,000 cm3 = 96 litres).**

Question 5

- **M1** volume = base area x height and substitution 2400 ÷ (30 x 20) seen
- **A1** 4 cm cao
- **Answer: 4 cm (2,400 cm3 ÷ (30 x 20) = 2,400 ÷ 600 = 4 cm).**

Question 6

- **B1** correct option B (40 L) cao
- **Answer: B) 40 L (0.5 m = 50 cm so 50 x 40 x 20 = 40,000 cm3 = 40 litres).**

Question 7

- **B1** 7 minutes cao
- **Answer: 7 minutes (Volume = 14 x 5 x 6 = 420 cm3 = 420 ml; 420 ÷ 60 = 7 minutes).**

Question 8

- (a) **B1** 3000 cm3 cao
- **(a) Answer: 3000 cm3**
- (b) **B1** 3 L cao
- **(b) Answer: 3 L**
- (c) **M1** 3000 ÷ 250 seen
- (c) **A1** 12 seconds cao
- **(c) Answer: 12 seconds**

Question 9

- **B1** correct option B (6 x 7 x 10 = 420 cm3) cao
- **Answer: B) 6 x 7 x 10 = 420 cm3; the others are 405, 400, 378, 384 cm3 respectively.**