KS2.M-Y5R2 Reasoning: Measures and Geometry

Calculators not allowed · about 60 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Write 2,450 centimetres as metres.

(1)

2 A rectangle has width 6.3 m and perimeter 28.6 m. Work out the length of the rectangle.

(2)

3 A rectangle is 1.8 m by 75 cm. Calculate its area in square metres.

(2)

4 Which is the larger angle: 132 degrees or 3/4 of a right angle? Tick the larger angle.

- ☐ 132 degrees
- ☐ 3/4 of a right angle

5 The angles in a triangle are 35 degrees and 78 degrees. Work out the size of the third angle.

(2)

6 A small storage box measures 30 cm by 20 cm by 15 cm. Find its volume in cubic centimetres.

(2)

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7 Write 2,250 millilitres as litres.

(1)

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8 Maya needs 2 hours 30 minutes to bake a tray of muffins. She wants to bake 3 trays, one after another. How long will it take her in hours and minutes?

(2)

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9 A garden path is made from tiles each 40 cm long. Four tiles are placed end to end, then a 25 cm stone is added. What is the total length in metres?

(2)

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10 A circle has radius 6 cm. What is its diameter?

(1)

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11 A packet weighs 1.35 kg. Sarah buys 3 packets. Work out the total mass in kilograms and in grams.

(2)

12 Here are three nets of solids labelled A, B and C. Which net could make a cube? Explain your answer.

Figure (to be drawn): *Three nets, each made of six equal squares, are shown on a grid. Net A: six squares in a single straight row (a 1 by 6 strip). Net B: a row of four squares side by side; one extra square is attached above the second square in that row, and one extra square is attached below the third square (a cross-like shape). Net C: six squares arranged as a solid rectangle, two rows of three squares each.*

- ☐ A
- ☐ B
- ☐ C

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13 A triangular field has base 24 m and height 10 m. Calculate its area in square metres.

(2)

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14 A regular pentagon is drawn. How many lines of symmetry does a regular pentagon have? Write the number.

(1)

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15 A train departs at 09:15 and the journey takes 2 hours 55 minutes. At what time does the train arrive?

(2)

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16 A scale drawing uses scale 1:250. A pond measures 4 cm on the drawing. What is the actual length of the pond in metres?

(2)

17 Estimate the total length by rounding each length to the nearest metre, then adding: 3.48 m, 2.66 m and 4.21 m. Give your estimate.

(2)

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18 Here are two shapes made from the same six identical 1 cm by 1 cm squares. Shape X is a 2 by 3 rectangle. Shape Y is an L shape with the same squares. Do the shapes have the same area? Explain your answer.

Figure (to be drawn): *Shape X: rectangle 2 by 3. Shape Y: L shape made from 6 unit squares.*

(2)

Mark scheme · KS2.M-Y5R2 Reasoning: Measures and Geometry

Question 1

- **B1** 24.5 m cao
- Answer: **24.5**

Question 2

- **M1** Partition perimeter: 2 x (length + 6.3) = 28.6 with correct rearrangement
- **B1** 8.0 m cao
- Answer: **8.0**

Question 3

- **M1** Convert 75 cm to 0.75 m and multiply 1.8 x 0.75 seen
- **B1** 1.35 m2 cao
- Answer: **1.35**

Question 4

- **B1** 132 degrees cao
- Answer: **132 degrees**

Question 5

- **M1** Add 35 + 78 = 113 seen or subtraction from 180 set up
- **B1** 67 degrees cao
- Answer: **67**

Question 6

- **M1** Multiply 30 x 20 x 15 or equivalent method
- **B1** 9000 cm3 cao
- Answer: **9000**

Question 7

- **B1** 2.25 L cao
- Answer: **2.25**

Question 8

- **M1** Multiply 2 hours 30 minutes by 3 or convert to minutes 150 x 3 seen
- **B1** 7 hours 30 minutes cao
- Answer: **7 hours 30 minutes**

Question 9

- **M1** Compute 4 x 40 = 160 and add 25 to get 185 cm or equivalent
- **B1** 1.85 m cao
- Answer: **1.85**

Question 10

- **B1** 12 cm cao
- Answer: **12 cm**

Question 11

- **M1** Multiply 1.35 x 3 = 4.05 kg or equivalent method
- **B1** 4.05 kg and 4050 g cao
- Answer: **4.05 kg; 4050 g**

Question 12

- **B1** Correct net named, for example B cao
- **B1** Reason given that the net has six squares arranged so opposite faces can fold without overlap or gap oe
- Answer: **B**

Question 13

- **M1** Use area formula 1/2 x base x height with 24 x 10
- **B1** 120 m2 cao
- Answer: **120**

Question 14

- **B1** 5 cao
- Answer: **5**

Question 15

- **M1** Add 2 hours 55 minutes to 09:15 correctly or convert to minutes 175 and add
- **B1** 12:10 cao
- Answer: **12:10**

Question 16

- **M1** Multiply 4 cm by 250 to get 1000 cm or set up scale 1:250
- **B1** 10 m cao
- Answer: **10 m**

Question 17

- **M1** Round each to nearest metre: 3, 3, 4 or equivalent rounding seen
- **B1** 10 m cao
- Answer: **10 m**

Question 18

- **B1** States that both shapes use six 1 cm2 squares so area equal
- **B1** Gives explanation that area counts number of unit squares so both are 6 cm2 oe
- Answer: **Yes. Both have area 6 cm2**