2.47-6 Mixed Problem-Solving Paper F: 30-minute Pack

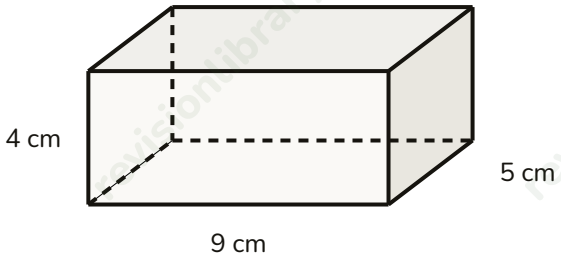
GL ASSESSMENT GL-11PLUS-MATHS · Calculators not allowed · about 30 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 A cuboid box has length 9 cm, width 5 cm and height 4 cm. Find the volume of the box.



(3)

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2 A cyclist rides 18 km in the first hour of a journey and 24 km in the second hour. Find her average speed for the whole journey.

(3)

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3 A bag contains 5 red counters, 3 blue counters and 2 green counters. A counter is picked at random. What is the probability that it is green? Give your answer as a fraction in its simplest form.

(3)

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4 A roll of fabric is 5.4 m long. Pieces of length 70 cm are cut from the roll. How many whole pieces can be cut, and what length of fabric is left over?

(4)

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5 N is a whole number such that $20 < N < 40$. N is a multiple of both 6 and 8. Find N.

(3)

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6 The ratio of Mia's age to her brother Theo's age is 3 : 7. The sum of their ages is 40. Find the ratio of Mia's age to Theo's age in 5 years' time, giving your answer in its simplest form.

(4)

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7 A charity raises money from three fundraising events: a bake sale, a raffle and a sponsored walk. The bake sale raised £145 and the raffle raised £212. The sponsored walk raised 1.5 times as much as the bake sale and raffle combined. Find the total amount raised by all three events.

(5)

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8 A film starts at 14:40 and finishes at 16:15. How long, in minutes, does the film last?

(2)

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9 A jacket usually costs £65. In a sale it is reduced by 20%. Find the sale price of the jacket.

(2)

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10 Write these fractions in order of size, smallest first: 3/4, 5/6, 7/12

(3)

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Mark scheme · 2.47-6 Mixed Problem-Solving Paper F: 30-minute Pack

Question 1

9 x 5 = 45 (area of the base)	**M1**
45 x 4 (oe)	**M1**
180 cm³ cao	**A1**

Answer: 180 cm^3

Question 2

18 + 24 = 42 (total distance)	**M1**
average speed = total distance / total time (oe)	**M1**
21 km/h cao	**A1**

Answer: 21 km/h

Question 3

5 + 3 + 2 = 10 counters in total (oe)	**M1**
probability = 2/10 (oe)	**M1**
1/5 cao	**A1**

Answer: 1/5

Question 4

5.4 m = 540 cm (oe)	**M1**
540 / 70 = 7 remainder 50 (oe)	**M1**
7 pieces cao	**A1**
50 cm left over cao	**A1**

Answer: 7 pieces, with 50 cm left over

Question 5

lists multiples of 6 between 20 and 40: 24, 30, 36 (oe)	**M1**
lists multiples of 8 between 20 and 40: 24, 32 (oe)	**M1**
24 cao	**A1**

Answer: 24

Question 6

3 + 7 = 10 parts; 40 / 10 = 4 (oe)	**M1**
Mia = 12, Theo = 28 (oe)	**M1**
in 5 years: Mia = 17, Theo = 33 (oe)	**M1**
17 : 33 cao	**A1**

Answer: 17 : 33

Question 7

145 + 212 = 357 (bake sale and raffle combined)	**M1**
1.5 x 357 (oe)	**M1**
£535.50 cao (sponsored walk)	**A1**
357 + 535.50 (oe)	**M1**
£892.50 cao	**A1**

Answer: £892.50

Question 8

14:40 to 16:00 is 80 minutes (oe)	**M1**
95 cao	**A1**

Answer: 95 minutes

Question 9

10% of 65 = 6.50, so 20% = 13 (oe)	**M1**
£52 cao	**A1**

Answer: £52

Question 10

identifies 12 as a common denominator for all three fractions (oe)	**M1**
converts to 9/12, 10/12, 7/12 (oe)	**M1**
7/12, 3/4, 5/6 cao	**A1**

Answer: 7/12, 3/4, 5/6

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