



EP.M140 GL Assessment Style Numerical Reasoning Paper 2

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

Total Marks

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Name: _____ Date: ____ / ____ / ____

Answer ALL questions. Show all your working.

1 What is 7,842 rounded to the nearest 1000?

- ☐ A) 7,000
- ☐ B) 8,000
- ☐ C) 7,800
- ☐ D) 7,500
- ☐ E) 8,500

(Total for Question 1 is 1 mark)

2 A jar contains 24 red sweets and 18 blue sweets. What fraction of the sweets are blue? Give your answer in simplest form.

- ☐ A) $\frac{3}{7}$
- ☐ B) $\frac{3}{4}$
- ☐ C) $\frac{3}{5}$
- ☐ D) $\frac{2}{7}$
- ☐ E) $\frac{3}{11}$

(Total for Question 2 is 1 mark)

3 Which number is a factor of both 42 and 90?

- ☐ A) 6
- ☐ B) 7
- ☐ C) 9
- ☐ D) 5
- ☐ E) 4

(Total for Question 3 is 1 mark)

- 4 A recipe for flapjack uses 180 g of oats and 75 g of butter to make 6 bars. Work out how many grams of oats and how many grams of butter are needed to make 10 bars.

(Total for Question 4 is 2 marks)

- 5 A cinema sells tickets at £4.50 for children and £7.20 for adults. On one day 128 tickets were sold for a total of £657.00.

(a) How many adult tickets were sold? (2)

(b) How many children tickets were sold? (1)

(Total for Question 5 is 3 marks)

- 6 A rectangular garden is 14 metres long and 9 metres wide. A path of uniform width is built inside the garden along the perimeter, leaving a central rectangular lawn measuring 8 metres by 3 metres. Work out the width of the path in metres.

(Total for Question 6 is 2 marks)

- 7 Which of these numbers is a multiple of 11?

- ☐ A) 2,233
- ☐ B) 2,235
- ☐ C) 2,236
- ☐ D) 2,240
- ☐ E) 2,242

(Total for Question 7 is 1 mark)

- 8** A school raised money for charity by selling biscuits. They sold 150 biscuits at £0.85 each and 90 at £0.60 each. They gave 10% of the money to a local youth club. Calculate the amount of money, in pounds, given to the youth club. Give your answer to the nearest penny.

(Total for Question 8 is 3 marks)

- 9** The angles in a triangle are in the ratio 3:4:5. Work out the size of the largest angle.

(Total for Question 9 is 2 marks)

- 10** A bus journey of 210 km takes 3 hours 30 minutes. What is the average speed of the bus in km/h? Give your answer to the nearest whole number.

(Total for Question 10 is 2 marks)

- 11** State the value of the digit 6 in the number 6,304.

- ☐ A) 6
- ☐ B) 60
- ☐ C) 600
- ☐ D) 6,000
- ☐ E) 60,000

(Total for Question 11 is 1 mark)

- 12** A shop sold 48 identical chairs at the same price. The total takings were £432.00. Work out the price of one chair in pounds and pence.

(Total for Question 12 is 3 marks)

13 A sequence starts 7, 14, 28, 56, ... What is the 7th term of this sequence?

(Total for Question 13 is 2 marks)

14 Liam cycles 18 km in 45 minutes. How far will he cycle in 2 hours at the same rate? Give your answer in kilometres.

(Total for Question 14 is 2 marks)

15 A fairground wheel makes 20 complete revolutions in 1 minute. How many degrees does it turn in 3 revolutions? Choose the correct answer.

- ☐ A) 360 degrees
- ☐ B) 540 degrees
- ☐ C) 720 degrees
- ☐ D) 1,080 degrees
- ☐ E) 2,160 degrees

(Total for Question 15 is 1 mark)

16 A box contains 5 red, 3 green and 2 blue counters. One counter is taken at random. What is the probability that it is not green? Give your answer as a fraction in simplest form.

(Total for Question 16 is 2 marks)

17 Work out $\frac{3}{4}$ of 160.

(Total for Question 17 is 3 marks)

18 A carpenter buys timber in lengths of 2.4 m. He needs to cut pieces of length 0.6 m. How many pieces can he get from one length of timber? Show your working.

(a) How many 0.6 m pieces can be cut from 2.4 m? (2)

(b) If the carpenter needs 18 pieces in total, how many lengths of 2.4 m must he buy? (1)

(Total for Question 18 is 3 marks)

19 A table shows the number of books borrowed from a small library in one week: Monday 12, Tuesday 18, Wednesday 14, Thursday 16, Friday 10. What is the mean number of books borrowed per day that week? Give your answer to 1 decimal place if necessary.

(Total for Question 19 is 2 marks)

20 A rectangular sheet of metal measures 120 cm by 80 cm. Squares of side 8 cm are cut from the sheet without overlap. What is the greatest number of full 8 cm squares that can be cut from the sheet?

(Total for Question 20 is 4 marks)

Mark scheme · EP.M140 GL Assessment Style Numerical Reasoning Paper 2

Question 1

- **B1** correct option B (8,000) cao
- **Answer: B) 8,000**

Question 2

- **B1** correct option A (3/7) cao
- **Answer: A) 3/7**

Question 3

- **B1** correct option A (6) cao
- **Answer: A) 6**

Question 4

- **M1** scaling method: $10/6 \times 180$ and $10/6 \times 75$ seen or equivalent
- **A1** 300 g oats and 125 g butter cao
- **Answer: 300 g oats and 125 g butter**

Question 5

- (a) **M1** form equation $7.2a + 4.5c = 657$ with $a + c = 128$ or equivalent method
- (a) **A1** 30 adults cao
- (a) **Answer: 30 adult tickets**
- (b) **B1** 98 children cao ft from (a)
- (b) **Answer: 98 children tickets**

Question 6

- **M1** method: $14 - 2w = 8$ (or $9 - 2w = 3$) seen
- **A1** $w = 3$ m cao
- **Answer: 3 m** ($14 - 2w = 8$ gives $w = 3$; checks with $9 - 2w = 9 - 6 = 3$, the lawn's width).

Question 7

- **B1** correct option A (2,233) cao
- **Answer: A) 2,233**

Question 8

- **M1** method to find takings: 150×0.85 and 90×0.60 seen
- **M1** sum of takings seen and 10% of total process
- **A1** £18.15 cao
- **Answer: £18.15**

Question 9

- **M1** method: $3x + 4x + 5x = 180$ or equivalent
- **A1** 75 degrees cao
- **Answer: 75 degrees**

Question 10

- **M1** method: convert time to hours (3.5) and divide 210 by 3.5 seen
- **A1** 60 km/h cao
- **Answer: 60 km/h**

Question 11

- **B1** correct option D (6,000) cao
- **Answer: D) 6,000**

Question 12

- **M1** method: divide 432 by 48 seen
- **M1** complete division to get 9.00 or equivalent
- **A1** £9.00 cao
- **Answer: £9.00**

Question 13

- **M1** recognition of multiplying by 2 each time or $7 \times 2^{n-1}$ seen
- **A1** 448 cao
- **Answer: 448**

Question 14

- **M1** method: find speed $18 \text{ km per } 0.75 \text{ h} = 24 \text{ km/h}$ or proportion used
- **A1** 48 km cao
- **Answer: 48 km**

Question 15

- **B1** correct option D (1,080 degrees) cao
- **Answer: D) 1,080 degrees**

Question 16

- **M1** method: total counters 10 and non-green count 7 seen
- **A1** $\frac{7}{10}$ cao
- **Answer: $\frac{7}{10}$**

Question 17

- **M1** method: $160 \times \frac{3}{4}$ or $160 \div 4 \times 3$ seen
- **M1** intermediate result $40 \times 3 = 120$ or equivalent
- **A1** 120 cao
- **Answer: 120**

Question 18

- (a) **M1** method: divide 2.4 by 0.6 seen
- (a) **A1** 4 pieces cao
- (a) **Answer: 4 pieces**
- (b) **B1** 5 lengths cao ($18 \div 4 = 4.5$ so 5 needed) ft from (a)
- (b) **Answer: 5 lengths**

Question 19

- **M1** method: add values and divide by 5 seen
- **A1** 14.0 cao
- **Answer: 14.0**

Question 20

- **M1** method: find how many 8 cm squares fit along each side: $120 \div 8$ and $80 \div 8$
- **M1** compute numbers: 15 along length and 10 along width
- **M1** multiply to get total squares 15×10
- **A1** 150 cao
- **Answer: 150**