



## EP.M111 Worded Problems Set F

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

Total Marks

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|  |
|--|

Name: \_\_\_\_\_ Date: \_\_\_\_ / \_\_\_\_ / \_\_\_\_

**Answer ALL questions. Show all your working.**

- 1** In the number 6,304, what is the value of the digit 3?

- ☐ A) 3
- ☐ B) 30
- ☐ C) 300
- ☐ D) 3,000
- ☐ E) 30,000

(Total for Question 1 is 1 mark)

- 2** A box contains 48 cupcakes. Priya puts them into bags with 6 cupcakes in each bag. How many full bags can she make?

(Total for Question 2 is 1 mark)

- 3** A train journey takes 2 hours 45 minutes. Olive is planning to arrive at the station 15 minutes before the train departs. If she needs 30 minutes to travel to the station, how long before the departure should she leave home?

(Total for Question 3 is 1 mark)

- 4** Round 7,348 as follows.

(a) Round 7,348 to the nearest 100.

(1)

(b) Round 7,348 to the nearest 10.

(1)

(Total for Question 4 is 2 marks)

**5** A shop sells pencils in packs of 12. Tomasz buys 5 packs and then gives 14 pencils to a friend. How many pencils does Tomasz have left?

**(a)** How many pencils did Tomasz buy altogether? **(1)**

**(b)** How many pencils are left after giving 14 to a friend? **(1)**

**(Total for Question 5 is 2 marks)**

**6** A recipe needs 250 g of flour to make 10 biscuits. How many grams of flour are needed to make 25 biscuits?

**(Total for Question 6 is 2 marks)**

**7** A class has 24 pupils. The ratio of girls to boys is 5:7. How many girls are in the class?

**(Total for Question 7 is 2 marks)**

**8** A cyclist travels at 15 km/h for 40 minutes, then at 20 km/h for 30 minutes. What distance does the cyclist travel in total? Give your answer to the nearest kilometre.

**(Total for Question 8 is 2 marks)**

**9** A water tank is 3 metres long, 2 metres wide and 1.5 metres deep. How many litres of water will fill the tank completely? (1 cubic metre = 1000 litres)

**(Total for Question 9 is 2 marks)**

- 10** A jacket is reduced by 30% in a sale. The sale price is £84. What was the original price of the jacket?

(Total for Question 10 is 2 marks)

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- 11** A cake recipe makes 8 cupcakes using  $\frac{3}{4}$  cup of sugar. If Lara wants to make 12 cupcakes, how many cups of sugar does she need?

(Total for Question 11 is 3 marks)

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- 12** A cylindrical water barrel has diameter 2.0 m and height 1.8 m. Calculate the capacity of the barrel in litres. Use  $\pi = 3.14$  and give your answer to the nearest 10 litres. (1 cubic metre = 1000 litres)

(Total for Question 12 is 4 marks)

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- 13** A car uses 6.5 litres of petrol for every 100 km. How much petrol, in litres, will it use on a 315 km journey? Give your answer to three decimal places.

(Total for Question 13 is 3 marks)

**14** A jar contains sweets in the ratio red:blue:green = 5:3:2. There are 200 sweets altogether.

**(a)** How many green sweets are there? (2)

.....  
**(b)** If 20 green sweets are removed, what is the new ratio of red:blue:green? (2)

.....  
(Total for Question 14 is 4 marks)

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**15** Amelia buys 3 paperback books at £4.35 each and 2 magazines at £2.10 each. She pays with a £20 note. How much change should she receive?

(Total for Question 15 is 4 marks)

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**16** Towns A and B are 210 km apart. A car leaves town A at 9:15 and travels towards B at 60 km/h. A cyclist leaves town B at 10:00 and travels towards A at 18 km/h. At what time do they meet? Also give the distance from town A to the meeting point, to the nearest kilometre.

(Total for Question 16 is 6 marks)

## Mark scheme • EP.M111 Worded Problems Set F

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### Question 1

- **B1** correct option C (300) cao
- **Answer: C) 300**

### Question 2

- **B1** 8 cao
- **Answer: 8 bags**

### Question 3

- **B1** 45 minutes cao
- **Answer: 45 minutes before departure**

### Question 4

- (a) **B1** 7,300 cao
- (a) **Answer: 7,300**
- (b) **B1** 7,350 cao
- (b) **Answer: 7,350**

### Question 5

- (a) **B1** 60 cao
- (a) **Answer: 60**
- (b) **B1** 46 cao
- (b) **Answer: 46**

### Question 6

- **M1** scaling up:  $250/10 \times 25$  or equivalent seen
- **A1** 625 g cao
- **Answer: 625 g**

### Question 7

- **M1** total parts  $5+7 = 12$  and  $24/12 = 2$  seen
- **A1**  $5 \times 2 = 10$  girls cao
- **Answer: 10 girls**

### Question 8

- **M1** convert times and find distances:  $15 \times (40/60)$  and  $20 \times (30/60)$  seen
- **A1** total distance =  $10 + 10 = 20$  km (to nearest km) cao
- **Answer: 20 km**

### Question 9

- **M1** volume =  $3 \times 2 \times 1.5 = 9 \text{ m}^3$  seen
- **A1** 9,000 litres cao
- **Answer: 9,000 litres**

### Question 10

- **M1** recognition that  $84 = 70\%$  of original or setup original =  $84/0.7$
- **A1** £120 cao
- **Answer: £120 (original price)**

### Question 11

- **M1** scale factor  $12/8 = 3/2$  seen
- **M1** multiply sugar:  $3/4 \times 3/2 = 9/8$  seen
- **A1**  $9/8 = 1 \frac{1}{8}$  cups cao
- **Answer: 1 1/8 cups (or 9/8 cups)**

### Question 12

- **M1** radius = 1.0 m and area =  $\pi \times r^2 = 3.14 \times 1^2$  seen
- **M1** volume = area  $\times$  height =  $3.14 \times 1.8 = 5.652 \text{ m}^3$  seen
- **M1** convert to litres:  $5.652 \times 1000 = 5652$  litres seen
- **A1** 5650 litres (to nearest 10 litres) cao
- **Answer: 5,650 litres (to nearest 10 litres)**

### Question 13

- **M1** method:  $315/100$  or 3.15 seen
- **M1** multiply:  $6.5 \times 3.15$  seen
- **A1** 20.475 litres cao
- **Answer: 20.475 litres**

### Question 14

- (a) **M1** total parts  $5+3+2 = 10$  and  $200/10 = 20$  seen
- (a) **A1** green =  $2 \times 20 = 40$  cao
- (a) **Answer: 40**
- (b) **M1** new counts: red 100, blue 60, green 20 seen
- (b) **A1** simplified ratio 5:3:1 cao
- (b) **Answer: 5:3:1**

### Question 15

- **M1**  $3 \times 4.35 = 13.05$  seen
- **M1**  $2 \times 2.10 = 4.20$  seen
- **M1** total cost  $13.05 + 4.20 = 17.25$  seen
- **A1** change =  $20.00 - 17.25 = £2.75$  cao
- **Answer: £2.75**

### Question 16

- **M1** car head start distance from 9:15 to 10:00:  $60 \times 0.75 = 45 \text{ km}$  seen
- **M1** remaining distance at 10:00 =  $210 - 45 = 165 \text{ km}$  seen
- **M1** combined speed  $60 + 18 = 78 \text{ km/h}$  seen
- **M1** time after 10:00 to meet  $165/78 \text{ h}$  seen
- **M1** convert  $165/78 = 2.1153846 \text{ h} = 2 \text{ h } 6.9... \text{ min}$  seen (2 h 7 min to nearest minute)
- **A1** meeting time 12:07 and distance from A =  $60 \times (0.75 + 165/78) \sim 171.923 \sim 172 \text{ km}$  (to nearest km) cao
- **Answer: They meet at about 12:07. Distance from A ~ 172 km (to nearest km).**