2.21 Worded Problems Set A: 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 ferry timetable shows departures every 35 minutes, starting at 08:15. What is the departure time of the 5th ferry of the day?

- ☐ A) 09:50
- ☐ B) 10:00
- ☐ C) 10:25
- ☐ D) 10:35
- ☐ E) 11:10

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2 On a map, a scale of 1:25000 is used. Two towns are 8 cm apart on the map. What is the real distance between the towns, in kilometres?

(2)

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3 Zainab cycles at a steady speed of 15 km/h to visit a friend. How far does she travel in 40 minutes?

- ☐ A) 6 km
- ☐ B) 8 km
- ☐ C) 9 km
- ☐ D) 10 km
- ☐ E) 12 km

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4 The mean age of 6 members of a chess club is 13 years. One new member, Harjit, joins the club, and the mean age of all 7 members becomes 14 years. How old is Harjit?

(2)

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5 Tariq thinks of a number. He doubles it, then adds 7, and the result is 29. What number did Tariq think of?

- ☐ A) 9
- ☐ B) 10
- ☐ C) 11
- ☐ D) 18
- ☐ E) 22

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6 A piece of ribbon is 3.6 m long. Priya cuts it into pieces that are each 40 cm long. How many complete pieces can she cut?

(1)

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7 Meera is saving for a bike that costs £145. She has already saved £58, and she saves £12 more from her pocket money each week.

(a) How much more money does Meera need to save? **(1)**

.....

(b) How many full weeks will it take her to save enough money for the bike? **(2)**

.....

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8 A charity bake sale raises £150 in total. The money is split between two school classes in the ratio 7:8, and each class then divides its own share equally among 5 local charities. How much does each charity in the class with the larger share receive?

- ☐ A) £10
- ☐ B) £14
- ☐ C) £16
- ☐ D) £20
- ☐ E) £30

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9 On 02/08, Amina drives from her home to visit her grandmother, a total distance of 132 km. She leaves home at 10:20 and drives the first 84 km at an average speed of 56 km/h, before stopping for a 15 minute break.

(a) At what time does Amina finish the first 84 km of the journey, before her break? **(1)**

.....

(b) She then drives the remaining distance at an average speed of 48 km/h. At what time does she arrive at her grandmother's house? **(2)**

.....

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10 A school orders 240 revision guides. 3/8 of the guides are for maths, 1/3 are for english, and the rest are for science. How many more maths guides are ordered than science guides?

- ☐ A) 10
- ☐ B) 20
- ☐ C) 30
- ☐ D) 40
- ☐ E) 70

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11 A school hall has 8 rows of chairs, with the same number of chairs in each row. If 3 more chairs were added to each row, the hall would hold 224 chairs in total.

(a) How many chairs are currently in each row? **(2)**

.....

(b) If instead 2 chairs were removed from each row (from the original number), how many chairs would the hall hold in total? **(1)**

.....

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12 Five friends, Declan, Ellie, Kofi, Zara and Yusuf, each contribute money to a joint birthday gift, in the ratio 2:3:3:4:8 respectively. The mean contribution across all five friends is £12. How much did Zara contribute?

- ☐ A) £3
- ☐ B) £6
- ☐ C) £9
- ☐ D) £12
- ☐ E) £24

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13 On 14/03, a coach carrying Year 6 pupils leaves the school at 09:45 for a trip to a science museum. The journey takes 1 hour 50 minutes. What time does the coach arrive at the museum?

- ☐ A) 10:35
- ☐ B) 11:15
- ☐ C) 11:25
- ☐ D) 11:35
- ☐ E) 12:35

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14 Nadia has a fruit bowl at home. The ratio of apples to oranges in the bowl is 3:2. There are 12 apples in the bowl. How many oranges are there?

(1)

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15 Find the mean of these five numbers: 3, 5, 7, 9, 16.

- ☐ A) 7
- ☐ B) 8
- ☐ C) 9
- ☐ D) 10
- ☐ E) 16

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16 Kwame buys 3 identical footballs. Each football costs £8.75. He pays with two £20 notes. How much change does he receive?

(2)

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Mark scheme · 2.21 Worded Problems Set A: 30-minute Pack

Question 1

the 5th ferry is 4 intervals after the 1st, so 4 x 35 = 140 minutes after 08:15 **M1**

D) 10:35 **A1**

Answer: D) 10:35

Question 2

8 x 25000 = 200000 cm (real distance in cm) **M1**

2 km, with correct conversion from cm **A1**

Answer: 2 km

Question 3

40 minutes = 2/3 hour **M1**

D) 10 km (15 x 2/3) **A1**

Answer: D) 10 km

Question 4

finds total age before (6 x 13 = 78) and total age after (7 x 14 = 98) **M1**

20 years old **A1**

Answer: 20 years old

Question 5

sets up 2x + 7 = 29, or equivalent, and finds 29 - 7 = 22 **M1**

C) 11 (22 / 2) **A1**

Answer: C) 11

Question 6

9 pieces, with correct conversion 3.6 m = 360 cm shown or implied **B1**

Answer: 9 pieces

Question 7

(a) £87 **B1**

(a) Answer: £87

(b) 87 / 12 = 7.25, or repeated addition/multiplication of 12 up to at least 84 **M1**

(b) 8 weeks, with recognition that 7 weeks (£84) is not enough **A1**

(b) Answer: 8 weeks

Question 8

total parts = 15, one part = £10, larger share (8 parts) = £80 **M1**

C) £16 (£80 / 5 charities) **A1**

Answer: C) £16

Question 9

(a) 11:50 **B1**

(a) Answer: 11:50

(b) finds departure time after the break (11:50 + 0:15 = 12:05) and the remaining journey time (48 / 48 = 1 hour) **M1**

(b) 13:05 (or 1:05 pm) **A1**

(b) Answer: 13:05

Question 10

maths = 3/8 x 240 = 90 and english = 1/3 x 240 = 80 **M1**

science = 240 - 90 - 80 = 70 **M1**

B) 20 (90 - 70) **A1**

Answer: B) 20

Question 11

(a) 224 / 8 = 28 (chairs per row if 3 were added to each row) **M1**

(a) 25 chairs per row **A1**

(a) Answer: 25 chairs per row

(b) 184 chairs **B1**

(b) Answer: 184 chairs

Question 12

total contributed = mean x 5 = 12 x 5 = £60 **M1**

total ratio parts = 2 + 3 + 3 + 4 + 8 = 20, one part = 60 / 20 = £3 **M1**

D) £12 (Zara's 4 parts x £3) **A1**

Answer: D) £12

Question 13

D) 11:35 **B1**

Answer: D) 11:35

Question 14

8 oranges **B1**

Answer: 8 oranges

Question 15

B) 8, from a total of 40 divided by 5 numbers **B1**

Answer: B) 8

Question 16

finds total cost 3 x £8.75 = £26.25 **M1**

£13.75, from £40.00 - £26.25 **A1**

Answer: £13.75

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