2.21-5 Worded Problems Set E: 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 Priya has an orthodontist appointment at 16:10. She wants to arrive 12 minutes early, and the journey there takes 33 minutes. What is the latest time she should leave home?

(2)

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2 A fun run raises £108, split between two local charities in the ratio 5:4. How much does the charity with the smaller share receive?

(2)

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3 A rectangular flower bed measures 7 m by 4.5 m. Efe wants to spread mulch over the bed, using 1 bag of mulch for every 3.5 square metres. How many bags of mulch does she need?

(2)

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4 9 identical rulers cost £11.70 in total. How much would 4 of the same rulers cost?

(2)

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5 A water butt contains 54 litres of water. 2/9 of the water is used to fill a watering can. How many litres of water are left in the water butt?

(2)

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6 A gymnastics class starts at 10:15 and lasts 50 minutes. What time does it finish?

(1)

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7 Grace's aunt is 7 years more than 3 times Grace's age. Grace's aunt is 40 years old. How old is Grace?

(2)

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8 In a class of 36 pupils, 1/3 walk to school, 5/12 come by bus, and the rest cycle. How many pupils cycle?

(3)

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9 A bakery sells muffins. Each muffin normally costs £1.60. There is an offer: buy 2 muffins and get a 3rd muffin at half price.

(a) Using the offer, Idris buys 3 muffins. How much does he pay? **(1)**

.....

(b) Using the same offer, how much would 9 muffins cost in total? **(2)**

.....

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10 On 14/11, a coach leaves a school at 08:05 for a trip to an aquarium 91 km away. It travels the first 56 km at an average speed of 42 km/h, then stops for a 15 minute break.

(a) At what time does the coach finish the first 56 km, before the break? **(1)**

.....

(b) The coach then covers the remaining distance at an average speed of 30 km/h. At what time does it arrive at the aquarium? **(2)**

.....

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11 An allotment produces 240 kg of vegetables in total. 5/12 of this is potatoes, and the remainder is shared between leeks and carrots in the ratio 2:3.

(a) How many kilograms of potatoes are produced? **(1)**

.....

(b) How many kilograms of carrots are produced? **(3)**

.....

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12 At 09:00, Elif leaves home and cycles along a straight cycle path at a steady speed of 8 km/h. At 09:15, her brother Kasper leaves the same house and cycles along the same path at a steady speed of 12 km/h, chasing after Elif.

(a) How far ahead of Kasper is Elif when Kasper sets off, in km? **(1)**

.....

(b) At what time does Kasper catch up with Elif? **(3)**

.....

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13 A bag of rice weighs 2.75 kg. What is this weight in grams?

(1)

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14 In a bag of sweets, the ratio of red sweets to green sweets is 5:2. There are 20 red sweets. How many green sweets are there?

(1)

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Mark scheme · 2.21-5 Worded Problems Set E: 30-minute Pack

Question 1

finds target arrival time = 16:10 - 0:12 = 15:58 **M1**

15:25, after subtracting the 33 minute journey **A1**

Answer: 15:25

Question 2

total parts = 9, one part = 108 / 9 = £12 **M1**

£48, from 4 x £12 **A1**

Answer: £48

Question 3

finds the area of the flower bed = 7 x 4.5 = 31.5 m² **M1**

9 bags, from 31.5 / 3.5 **A1**

Answer: 9 bags

Question 4

finds the cost of 1 ruler = 11.70 / 9 = £1.30 **M1**

£5.20, from 4 x £1.30 **A1**

Answer: £5.20

Question 5

finds water used = 2/9 x 54 = 12 litres **M1**

42 litres **A1**

Answer: 42 litres

Question 6

11:05 **B1**

Answer: 11:05

Question 7

sets up 3x + 7 = 40, or equivalent, and finds 3x = 33 **M1**

11 years old **A1**

Answer: 11 years old

Question 8

finds pupils who walk = 1/3 x 36 = 12 **M1**

finds pupils who come by bus = 5/12 x 36 = 15 **M1**

9 pupils, from 36 - 12 - 15 **A1**

Answer: 9 pupils

Question 9

(a) £4.00, from 2 x £1.60 + £0.80 **B1**

(a) Answer: £4.00

(b) recognises that 9 muffins under the offer means three groups of (2 full price + 1 half price) **M1**

(b) £12.00, from 3 x £4.00 **A1**

(b) Answer: £12.00

Question 10

(a) 09:25 **B1**

(a) Answer: 09:25

(b) finds the time after the break (09:25 + 0:15 = 09:40) and the remaining journey time (35 / 30 = 7/6 hours = 1 hour 10 minutes) **M1**

(b) 10:50 **A1**

(b) Answer: 10:50

Question 11

(a) 100 kg, from 5/12 x 240 **B1**

(a) Answer: 100 kg

(b) finds the remainder = 240 - 100 = 140 kg **M1**

(b) finds total ratio parts = 5, one part = 140 / 5 = 28 kg **M1**

(b) 84 kg, from 3 x 28 **A1**

(b) Answer: 84 kg

Question 12

(a) 2 km **B1**

(a) Answer: 2 km

(b) finds the closing speed = 12 - 8 = 4 km/h **M1**

(b) finds the time to close the 2 km gap = 2 / 4 = 0.5 hours (30 minutes) **M1**

(b) 09:45 **A1**

(b) Answer: 09:45

Question 13

2750 g, with correct conversion 1 kg = 1000 g **B1**

Answer: 2750 g

Question 14

8 green sweets, with correct scaling shown or implied **B1**

Answer: 8 green sweets

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