2.10-3 Measures, Units and Time: Practice Set 3: 30-minute Pack

GL ASSESSMENT GL · Calculators not allowed · about 30 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 A night bus departs at 23:50 and arrives at its destination at 00:35 the following morning. Calculate the length of the journey in minutes.

(1)

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2 A school coach trip to a theme park leaves school at 08:05.

(a) The outward journey takes 2 hours 50 minutes, including one 15 minute rest stop. Calculate the time the coach arrives at the theme park. **(2)**

.....

(b) The return journey begins at 16:20. It includes a 20 minute stop and takes 3 hours 5 minutes in total. At what time does the coach arrive back at school? **(2)**

.....

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3 A printer prints at a constant rate of 20 pages per minute. Calculate how many seconds it takes to print 15 pages.

- ☐ A) 60 seconds
- ☐ B) 45 seconds
- ☐ C) 30 seconds
- ☐ D) 15 seconds
- ☐ E) 75 seconds

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4 Niamh's suitcase is weighed on an airport luggage scale, which shows a reading of 21.6 kg. The airline's limit is 20 kg, with an excess baggage charge of £6 per 100 g over the limit. Calculate the excess baggage charge Niamh must pay.

(3)

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5 A bottle of squash concentrate is diluted with water in the ratio 1 : 4 (concentrate : water) to make ready-to-drink juice. Grace wants to make 3.5 litres of ready-to-drink juice. Calculate how many millilitres of concentrate she needs.

(3)

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6 A car's odometer reads 48362 km at the start of a journey. At the end of the journey it reads 48517 km. Calculate the distance travelled, giving your answer in both km and m.

(2)

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7 Convert 3 and 1/2 litres into millilitres.

- ☐ A) 35000 ml
- ☐ B) 3520 ml
- ☐ C) 350 ml
- ☐ D) 3050 ml
- ☐ E) 3500 ml

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8 A bottle of children's medicine contains 150 ml. The recommended dose is 7.5 ml every 6 hours. Calculate how many complete doses the bottle contains.

(2)

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9 A garden water butt holds 180 litres when full. It is currently 3/5 full.

(a) Calculate the number of litres currently in the water butt. **(2)**

.....

(b) The tap on the water butt drains water at a constant rate of 3 litres per minute, but light rain refills it at the same time, at a rate of 0.6 litres per minute. Calculate the net rate at which the water level falls, in litres per minute. **(1)**

.....

(c) Calculate how long it will take, in minutes, for the water butt to empty completely at this net rate. **(2)**

.....

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10 Tanvir cycles from home to the coast, a distance of 30 km, at an average speed of 20 km/h.

(a) Calculate the time taken for the outward journey. **(1)**

.....

(b) Tanvir wants his average speed for the whole 60 km round trip (there and back) to be 24 km/h. Calculate the total time allowed for the round trip. **(2)**

.....

(c) Calculate the average speed Tanvir needs for the return journey in order to achieve this. **(2)**

.....

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11 A rectangular room measures 4.6 m by 3.4 m. Skirting board is fitted around the full perimeter of the room, except for a 90 cm gap left for the doorway. Skirting board costs £4.50 per metre and is sold only in whole metre lengths (any part-metre must be rounded up to the next whole metre).

(a) Calculate the total perimeter of the room. **(1)**

.....

(b) Calculate the length of skirting board needed, after subtracting the doorway gap. Give your answer in metres. **(2)**

.....

(c) Calculate the total cost of the skirting board, remembering it is sold only in whole metre lengths. **(2)**

.....

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12 A garden rain gauge is marked in millimetres. There is a labelled line every 10 mm, with 4 equally spaced unlabelled lines in between. The water level sits exactly on the second small line above the 30 mm mark. State the reading on the rain gauge.

(1)

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Mark scheme · 2.10-3 Measures, Units and Time: Practice Set 3: 30-minute Pack

Question 1

45 minutes cao **B1**

Answer: 45 minutes

Question 2

(a) Adds 2 hours 50 minutes to 08:05 (oe) **M1**

(a) 10:55 cao **A1**

(a) Answer: 10:55

(b) Adds 3 hours 5 minutes to 16:20 (oe) **M1**

(b) 19:25 cao **A1**

(b) Answer: 19:25

Question 3

B) 45 seconds cao **B1**

Answer: 45 seconds

Question 4

Finds the excess mass: 21.6 - 20 = 1.6 kg (oe) **M1**

Converts to 1600 g and finds the number of 100 g lots: 1600 / 100 = 16 (oe) **M1**

£96 cao **A1**

Answer: £96

Question 5

Total parts = 1 + 4 = 5 (oe) **M1**

Converts 3.5 litres to 3500 ml and divides by 5 (oe) **M1**

700 ml cao **A1**

Answer: 700 ml

Question 6

155 km cao **B1**

155000 m cao (ft) **B1**

Answer: 155 km (155000 m)

Question 7

E) 3500 ml cao **B1**

Answer: 3500 ml

Question 8

150 / 7.5 (oe) **M1**

20 doses cao **A1**

Answer: 20 doses

Question 9

(a) 3/5 * 180 (oe) **M1**

(a) 108 litres cao **A1**

(a) Answer: 108 litres

(b) 2.4 litres per minute cao **B1**

(b) Answer: 2.4 litres per minute

(c) 108 / 2.4, ft from parts a and b (oe) **M1**

(c) 45 minutes cao (ft) **A1**

(c) Answer: 45 minutes

Question 10

(a) 1.5 hours (1 hour 30 minutes) cao **B1**

(a) Answer: 1.5 hours (1 hour 30 minutes)

(b) 60 / 24 (oe) **M1**

(b) 2.5 hours (2 hours 30 minutes) cao **A1**

(b) Answer: 2.5 hours (2 hours 30 minutes)

(c) Finds the remaining time (their b minus their a) and divides 30 by it, ft (oe) **M1**

(c) 30 km/h cao (ft) **A1**

(c) Answer: 30 km/h

Question 11

(a) 16 m cao **B1**

(a) Answer: 16 m

(b) 16 - 0.9, ft from part a (oe) **M1**

(b) 15.1 m cao (ft) **A1**

(b) Answer: 15.1 m

(c) Rounds 15.1 m up to 16 m, ft from part b (oe) **M1**

(c) £72.00 cao (ft) **A1**

(c) Answer: £72.00

Question 12

34 mm cao **B1**

Answer: 34 mm

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