



EP.M122 Timetables, Duration and the 24-Hour Clock

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

Total Marks

Name: _____ Date: ____ / ____ / ____

Answer ALL questions. Show all your working.

- 1** A local train leaves Meadowford at 08:15 and arrives Riverton at 09:02. How long does the journey take?

- ☐ A) 47 minutes
☐ B) 1 hour 13 minutes
☐ C) 57 minutes
☐ D) 1 hour 47 minutes
☐ E) 35 minutes

(Total for Question 1 is 1 mark)

- 2** What is 7:20 pm written in 24-hour clock notation?

- ☐ A) 07:20
☐ B) 17:20
☐ C) 19:20
☐ D) 20:20
☐ E) 12:20

(Total for Question 2 is 1 mark)

- 3** A night bus leaves at 23:50. The journey takes 25 minutes. At what time does it arrive (24-hour clock)?

- ☐ A) 00:05
☐ B) 00:10
☐ C) 00:15
☐ D) 23:25
☐ E) 01:15

(Total for Question 3 is 1 mark)

4 Buses leave Central Station every 15 minutes, starting at 09:05. What time will the third bus after 09:05 leave?

- ☐ A) 09:20
- ☐ B) 09:35
- ☐ C) 09:50
- ☐ D) 09:30
- ☐ E) 09:05

(Total for Question 4 is 1 mark)

5 A train timetable shows a departure from Colne at 14:40 and arrival at Eastbury at 15:55.

(a) How long is the scheduled journey from Colne to Eastbury? (1)

.....

(b) If the train is delayed and arrives at 16:03, how many minutes later than scheduled is the arrival? (1)

.....

(Total for Question 5 is 2 marks)

6 A flight leaves at 06:55. Flight time is 3 hours 40 minutes. At what time does it land (24-hour clock)?

(Total for Question 6 is 2 marks)

7 Buses stop at the High Street at 09:40 and 10:05. If you arrive at the bus stop at 09:53, how many minutes must you wait for the next bus?

(Total for Question 7 is 1 mark)

- 8** A journey is as follows: train departs 12:15 and arrives at the interchange at 12:55. A connecting bus leaves the interchange at 13:10 and takes 40 minutes to the final stop. Calculate the total time from 12:15 until arrival at the final stop, giving your answer in minutes.

(Total for Question 8 is 2 marks)

- 9** A ferry trip starts at 22:30 and ends at 01:20 the next day. What is the duration of the trip in hours and minutes?

(Total for Question 9 is 2 marks)

- 10** Which of these is the correct 12-hour clock name for 00:00?

- ☐ A) 12:00 am (midnight)
- ☐ B) 12:00 pm (noon)
- ☐ C) 00:00 (24-hour)
- ☐ D) 11:59 pm
- ☐ E) 12:01 am

(Total for Question 10 is 1 mark)

- 11** A late-evening train departs at 21:40 and arrives at 00:25 the next day. Calculate the duration of the journey in hours and minutes.

(Total for Question 11 is 2 marks)

- 12** Buses on the X5 route start at 06:10 and run every 20 minutes. What time will the seventh bus after 06:10 leave? Give the time in 24-hour format.

(Total for Question 12 is 2 marks)

- 13** A journey: a train leaves at 14:15 and arrives at the interchange at 15:05. The connecting bus leaves at 15:35 and the bus ride takes 1 hour 10 minutes. Calculate the total time from 14:15 until arrival at the final stop. Give your answer in hours and minutes.

(Total for Question 13 is 3 marks)

- 14** The school day starts at 08:55 and finishes at 15:20. Work out the length of the school day in minutes.

(Total for Question 14 is 3 marks)

- 15** A coach leaves at 23:15 and is scheduled to arrive at 02:00 the next day. The driver plans a 40 minute stop part way through the trip. Including the stop, how long will the trip take in hours and minutes?

(Total for Question 15 is 3 marks)

- 16** A bus leaves Stop A at 09:50 and arrives Stop B at 10:28. It returns by leaving Stop B at 10:45 and arriving back at Stop A at 11:23. Work out the total time the bus spends moving during these two runs and the length of the layover at Stop B.

(Total for Question 16 is 4 marks)

- 17** A complex journey starts at 05:55. The first leg takes 1 hour 25 minutes. At arrival there is a 25 minute wait, then a bus ride of 1 hour 15 minutes, followed by a 10 minute wait and a final train of 50 minutes. What time do you arrive at the end of the journey (24-hour clock), and what is the total duration of the journey in minutes?

(Total for Question 17 is 4 marks)

Mark scheme · EP.M122 Timetables, Duration and the 24-Hour Clock

Question 1

- **B1** correct option A (47 minutes) cao
- **Answer: A) 47 minutes (08:15 to 09:02 is 47 minutes).**

Question 2

- **B1** correct option C (19:20) cao
- **Answer: C) 19:20**

Question 3

- **B1** correct option C (00:15) cao
- **Answer: C) 00:15**

Question 4

- **B1** correct option C (09:50) cao
- **Answer: C) 09:50 (09:05 is the start; the three buses after it leave at 09:20, 09:35 and 09:50, so the third bus after 09:05 leaves at $09:05 + 3 \times 15 = 09:50$).**

Question 5

- (a) **B1** 1 hour 15 minutes (14:40 to 15:55) cao
- (a) **Answer: 1 hour 15 minutes**
- (b) **B1** 8 minutes later than scheduled cao
- (b) **Answer: 8 minutes later**

Question 6

- **M1** adds hours and minutes correctly ($06:55 + 3\text{h } 40\text{m}$ seen) oe
- **A1** 10:35 cao
- **Answer: 10:35 ($06:55 + 3\text{h } 40\text{m} = 10:35$).**

Question 7

- **B1** 12 minutes cao
- **Answer: 12 minutes (next bus at 10:05; $10:05$ minus $09:53 = 12$ minutes).**

Question 8

- **M1** adds journey parts and waiting time correctly ($40 + 15 + 40$) or equivalent method
- **A1** 95 minutes cao
- **Answer: 95 minutes (train 40 min, wait 15 min, bus 40 min; total $40+15+40 = 95$).**

Question 9

- **M1** recognises crossing midnight and computes $22:30$ to $24:00 = 1\text{h}30$ and $00:00$ to $01:20 = 1\text{h}20$
- **A1** 2 hours 50 minutes cao
- **Answer: 2 hours 50 minutes**

Question 10

- **B1** correct option A (12:00 am, midnight) cao
- **Answer: A) 12:00 am (midnight).**

Question 11

- **M1** recognises crossing midnight and computes $21:40$ to $24:00 = 2\text{h}20$ and $00:00$ to $00:25 = 0\text{h}25$
- **A1** 2 hours 45 minutes cao
- **Answer: 2 hours 45 minutes ($21:40$ to $00:25 = 2\text{h}20 + 0\text{h}25 = 2\text{h}45$).**

Question 12

- **M1** adds 7 intervals of 20 minutes ($7 \times 20 = 140$ minutes) or shows method to add intervals
- **A1** 08:30 cao
- **Answer: 08:30** ($06:10 + 140 \text{ minutes} = 06:10 + 2 \text{ hours } 20 \text{ minutes} = 08:30$).

Question 13

- **M1** calculates train time 14:15 to 15:05 = 50 minutes
- **M1** calculates waiting time 15:05 to 15:35 = 30 minutes and bus time 70 minutes seen
- **A1** 2 hours 30 minutes cao
- **Answer: 2 hours 30 minutes** (train 50 min + wait 30 min + bus 70 min = 150 minutes = 2h30).

Question 14

- **M1** calculates hours difference 08:55 to 15:20 = 6 hours and some minutes
- **M1** calculates minutes: 6 hours = 360 minutes and extra 25 minutes
- **A1** 385 minutes cao
- **Answer: 385 minutes** ($08:55 \text{ to } 15:20 = 6 \text{ hours } 25 \text{ minutes} = 6 \times 60 + 25 = 360 + 25 = 385$).

Question 15

- **M1** recognises crossing midnight and computes journey time 23:15 to 02:00 = 2 hours 45 minutes
- **M1** adds 40 minute stop to journey time
- **A1** 3 hours 25 minutes cao
- **Answer: 3 hours 25 minutes** (travel 2h45 plus 40 min stop = 3h25).

Question 16

- **M1** calculates outward travel 09:50 to 10:28 = 38 minutes
- **M1** calculates return travel 10:45 to 11:23 = 38 minutes
- **M1** calculates layover 10:28 to 10:45 = 17 minutes
- **A1** total moving time 76 minutes and layover 17 minutes cao
- **Answer: Total moving time 76 minutes (38 + 38) and layover 17 minutes (10:28 to 10:45).**

Question 17

- **M1** computes arrival after first leg: $05:55 + 1\text{h}25 = 07:20$
- **M1** computes arrival after bus leg: $07:20 + 25 \text{ wait} + 1\text{h}15 = 09:00$
- **M1** computes final arrival after 10 minute wait and 50 minute train = 10:00
- **A1** total duration 245 minutes and arrival 10:00 cao
- **Answer: Arrival 10:00. Total duration 245 minutes** ($05:55 \text{ to } 10:00 = 4 \text{ hours } 5 \text{ minutes} = 245 \text{ minutes}$).