

WA6MMGNS1

Non-spatial measurement

Core + Challenge

Timetables and Duration — Marking Key

I can read 12- and 24-hour times and timetables, and work out how long events and journeys take.

For tutors and parents. Award method marks for correct working even if the final answer is wrong.

Marks summary

A Warm up: 16 B Practise: 22 C Think it through: 10 D Challenge: 9 **Total: 57**

Gold shading in this key shows what the child should have shaded or drawn. Accept any correct arrangement unless the question fixes it.

A

Warm up *answers*

/ 16 marks

Q	Answer	Model answer / notes	Marks
1	15:40	3:40 pm → add 12 to the hour: 3 + 12 = 15.	1
2	09:15	9:15 am keeps its hour.	1
3	23:50	11:50 pm → add 12 to the hour: 11 + 12 = 23.	1
4	18:25	6:25 pm → add 12 to the hour: 6 + 12 = 18.	1
5	2:35 pm	5 6 7 8  Minute hand on 7; hour hand part of the way from 2 to 3. The hour hand must not point straight at a number. All four clocks are drawn above.	1
6	7:10 am	Minute hand on 2; hour hand part of the way from 7 to 8. The hour hand must not point straight at a number.	1
7	8:55 pm	Minute hand on 11; hour hand part of the way from 8 to 9. The hour hand must not point straight at a number.	1
8	12:20 pm	Minute hand on 4; hour hand part of the way from 12 to 1. The hour hand must not point straight at a number.	1
9	16:15	pm, so add 12: 4 + 12 = 16.	1
10	12:30 am	00 is the midnight hour, so it is 12:30 am (just after midnight).	1
11	12:45	12:45 pm is just after noon, so the hour stays 12.	1
12	7:45 pm	19 – 12 = 7, and it is after noon: 7:45 pm.	1

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Q	Answer	Model answer / notes	Marks
13	1 h 35 min	08:45 → 09:00 is 15 min, 09:00 → 10:00 is 1 h, 10:00 → 10:20 is 20 min.	1
14	3 h 25 min	9:50 → 10:00 am is 10 min, 10 am → 1 pm is 3 h, then 15 min.	1
15	2 h 35 min	22:40 → 23:00 is 20 min, 23:00 → 01:00 is 2 h (past midnight), then 15 min.	1
16	35 min	11:35 → 12:00 is 25 min, then 10 min more after noon.	1

B

Practise *answers and working*

/ 22 marks

Q	Answer	Working / sample response	Marks
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1

a) 7:33 am (Bus 3) b) 33 min c) 08:05

Bus: Piara Waters to Cockburn Central Stn · all times am

Stop	Bus 1	Bus 2	Bus 3	Bus 4	Bus 5
Piara Waters Shopping Ctr	6:48	7:10	7:25	7:45	8:05
Harrisdale Central	6:55	7:18	7:33	7:53	8:12
Atwell	7:06	7:31	7:47	8:07	8:24
Cockburn Central Stn	7:15	7:41	7:58	8:19	8:34

3

a) Bus 3 reaches Cockburn Central at 7:58 am; Bus 4 arrives at 8:19 am (too late). Bus 3 leaves Harrisdale at 7:33 am.

b) 7:25 am to 7:58 am = 33 min.

c) 8:05 am = 08:05.

1 mark for each part. In a) accept "Bus 3" or "7:33 am".

2

a) 53 min b) 11 min c) Train 3, 07:39

Train: Mandurah Line to Perth · Weekdays · 24-hour time

Station	Train 1	Train 2	Train 3	Train 4
Mandurah	06:52	07:07	07:22	07:37
Rockingham	07:09	07:24	07:39	07:54
Cockburn Central	07:27	07:42	07:57	08:12
Murdoch	07:31	07:46	08:01	08:16
Bull Creek	07:34	07:49	08:04	08:19
Canning Bridge	07:38	07:53	08:08	08:23
Elizabeth Quay	07:45	08:00	08:15	08:30

3

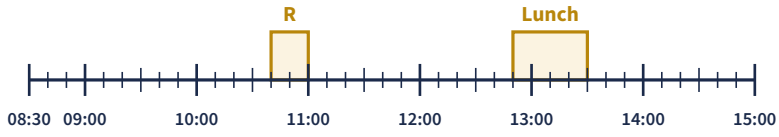
a) 07:07 to 08:00 = 53 min.

b) The next train at Murdoch is 08:01: 07:50 to 08:01 = 11 min.

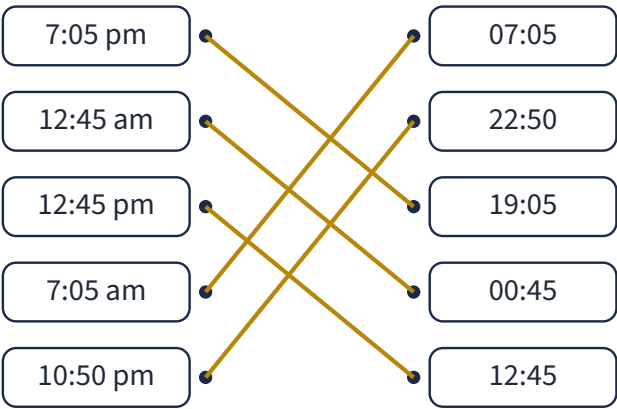
c) Train 3 reaches Canning Bridge at 08:08 (Train 4 is 08:23, too late). It leaves Rockingham at 07:39.

1 mark for each part.

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Q	Answer	Working / sample response	Marks																				
3	b) 1 h c) 5 h 30 min	 b) Recess 20 min + lunch 40 min = 60 min = 1 h. c) 08:30 to 15:00 is 6 h 30 min. 6 h 30 min – 1 h = 5 h 30 min. 1 mark: both breaks shaded in the right places. 1 mark: 1 h. 1 mark: 5 h 30 min.	3																				
4	See table	<table border="1"> <thead> <tr> <th>Activity</th><th>Start</th><th>Duration</th><th>Finish</th></tr> </thead> <tbody> <tr> <td>Bus to Perth Zoo</td><td>9:15 am</td><td>35 min</td><td>9:50 am</td></tr> <tr> <td>African Savannah walk</td><td>9:50 am</td><td>1 h 25 min</td><td>11:15 am</td></tr> <tr> <td>Lunch on the lawn</td><td>11:15 am</td><td>45 min</td><td>12 noon</td></tr> <tr> <td>Reptile encounter</td><td>12 noon</td><td>50 min</td><td>12:50 pm</td></tr> </tbody> </table> 9:15 am + 35 min = 9:50 am. 9:50 am + 1 h 25 min = 11:15 am. 11:15 am to 12 noon = 45 min. 12 noon + 50 min = 12:50 pm. 3 marks: all seven blanks correct. 2 marks: five or six. 1 mark: three or four.	Activity	Start	Duration	Finish	Bus to Perth Zoo	9:15 am	35 min	9:50 am	African Savannah walk	9:50 am	1 h 25 min	11:15 am	Lunch on the lawn	11:15 am	45 min	12 noon	Reptile encounter	12 noon	50 min	12:50 pm	3
Activity	Start	Duration	Finish																				
Bus to Perth Zoo	9:15 am	35 min	9:50 am																				
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Lunch on the lawn	11:15 am	45 min	12 noon																				
Reptile encounter	12 noon	50 min	12:50 pm																				
5	03:15 = 3:15 am	23:45 + 15 min = 00:00 (midnight). 3 h 15 min is still to go: 03:15. 03:15 is 3:15 am (the next morning). 1 mark: 03:15. 1 mark: 3:15 am.	2																				
6	20:45	 The movie starts at 6:50 pm = 18:50. 18:50 + 2 h = 20:50, then take away 5 min: 20:45 (a quarter to nine). 1 mark: hands drawn at 8:45. 1 mark: 20:45.	2																				
7	16:30	Cooking and resting take 1 h 45 min + 15 min = 2 h. 6:30 pm – 2 h = 4:30 pm = 16:30. 1 mark: total 2 h. 1 mark: 16:30.	2																				
8	10:27 am	A game and a break take 15 min, so games start at 9:00, 9:15, 9:30, 9:45, 10:00 and 10:15. The 6th game finishes at 10:15 + 12 min = 10:27 am. 1 mark: 6th game starts at 10:15 am. 1 mark: 10:27 am.	2																				

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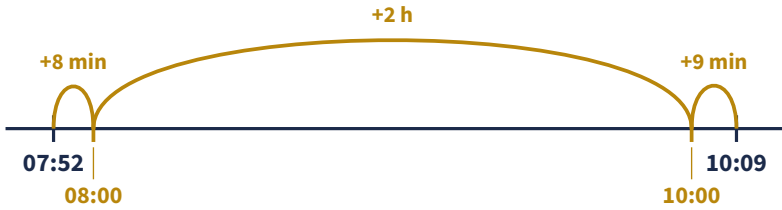
Q	Answer	Working / sample response	Marks
9	See lines	 7:05 pm = 19:05; 12:45 am = 00:45; 12:45 pm = 12:45; 7:05 am = 07:05; 10:50 pm = 22:50. <i>2 marks: all five correct. 1 mark: three or four correct.</i>	2

C Think it through *sample answers and criteria*

/ 10 marks

Q	Answer	Working / sample response	Marks
1	No, 1 h 35 min	Time does not work like ordinary numbers: an hour has 60 minutes, not 100. 9:45 → 10:00 is 15 min, 10:00 → 11:00 is 1 h, 11:00 → 11:20 is 20 min: 1 h 35 min. <i>1 mark: explains there are 60 minutes in an hour (1 h 75 min is not a real duration).</i> <i>1 mark: 1 h 35 min.</i>	2
2	False; 23:15	00:45 is 45 minutes after midnight (12:45 am): the 00 hour starts at midnight. 45 minutes before midnight is 24:00 – 45 min = 23:15 (11:15 pm). <i>1 mark: False, with the reason that 00:45 is after midnight.</i> <i>1 mark: 23:15.</i>	2
3	Sometimes	9:00 am to 3:00 pm is 6 hours, so it can be true. 11:50 am to 12:10 pm is only 20 minutes, so it is not always true. <i>1 mark: Sometimes.</i> <i>1 mark: one example each way.</i>	2
4	D	A, B and C each take 1 h 35 min (C goes past midnight). D takes 1 h 45 min. <i>1 mark: D.</i> <i>1 mark: shows the other three are all 1 h 35 min.</i>	2

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Q	Answer	Working / sample response	Marks
5	2 h 17 min	 Jump 07:52 → 08:00 (8 min), 08:00 → 10:00 (2 h), 10:00 → 10:09 (9 min). $8 \text{ min} + 2 \text{ h} + 9 \text{ min} = 2 \text{ h } 17 \text{ min}.$ <i>1 mark: jumps shown to friendly times.</i> <i>1 mark: 2 h 17 min.</i>	2

D Challenge *solutions and criteria*

/ 9 marks

Q	Answer	Working / sample response	Marks
1	a) Bus 2 (7:10 am) b) 16 min c) 54 min	The latest train reaching Bull Creek by 08:10 is Train 3 (08:04). It leaves Cockburn Central at 07:57. The bus must arrive by 07:52. Bus 2 arrives 7:41 am; Bus 3 arrives 7:58 am (too late). So Bus 2, leaving Piara Waters at 7:10 am. b) 07:41 to 07:57 = 16 min. c) 07:10 to 08:04 = 54 min. <i>1 mark for each part.</i>	3
2	a) 16 b) 28 min	The minutes must be the hour digits reversed, and must be less than 60: 00:00, 01:10, 02:20, 03:30, 04:40, 05:50, 10:01, 11:11, 12:21, 13:31, 14:41, 15:51, 20:02, 21:12, 22:22, 23:32. Hours 06–09 and 16–19 do not work (60–99 minutes). a) 16 times. b) 23:32 to 00:00 = 28 min. <i>1 mark: a systematic method.</i> <i>1 mark: 16.</i> <i>1 mark: 28 min.</i>	3
3	4 h 6 min	1 January: 5:12 am to 7:22 pm = 14 h 10 min. 21 June: 7:16 am to 5:20 pm = 10 h 4 min. $14 \text{ h } 10 \text{ min} - 10 \text{ h } 4 \text{ min} = 4 \text{ h } 6 \text{ min}.$ <i>1 mark: 14 h 10 min.</i> <i>1 mark: 10 h 4 min.</i> <i>1 mark: 4 h 6 min.</i>	3