

WA5MMGNS2

Non-spatial measurement

Core + Challenge

NAPLAN-style

12- and 24-Hour Time — Marking Key

I can change between 12-hour and 24-hour time, read and draw clocks, and find durations.

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	06:20	Morning (am) keeps its hour; use 2 digits: 06:20.	1
2	15:45	pm, so add 12: $3 + 12 = 15$.	1
3	23:05	pm, so add 12: $11 + 12 = 23$.	1
4	00:25	12:25 am is 25 minutes after midnight, so the hour is 00. Not 12:25 or 24:25.	1
5	8:50 am	The hour is less than 12, so it is am.	1
6	5:35 pm	$17 - 12 = 5$, and it is after noon: 5:35 pm.	1
7	12:40 pm	12:40 is just after noon, so it is 12:40 pm (do not subtract 12).	1
8	9:15 pm	$21 - 12 = 9$: 9:15 pm.	1
9	14:25	The clock shows 2:25. pm, so add 12: $2 + 12 = 14$.	1
10	07:10	The clock shows 7:10. Morning keeps its hour: 07:10.	1
11	22:20	The clock shows 10:20. pm, so add 12: $10 + 12 = 22$.	1
12	17:10	The clock shows 5:10. pm, so add 12: $5 + 12 = 17$.	1

13

14

13 4:40 pm



1

16:40 = 4:40 pm. Minute hand on 8; hour hand between 4 and 5, two-thirds of the way to 5. Items 13 and 14 are drawn here.

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Q	Answer	Model answer / notes	Marks
14	9:25 am	09:25 = 9:25 am. Minute hand on 5; hour hand a bit less than halfway from 9 to 10.	1
15	9:05 pm	15  16  21:05 = 9:05 pm. Minute hand on 1; hour hand just past 9. Items 15 and 16 are drawn here.	1
16	1:50 pm	13:50 = 1:50 pm. Minute hand on 10; hour hand nearly at 2 (between 1 and 2).	1

B

Practise *answers and working*

/ 22 marks

Q

Answer

Working / sample response

Marks

1 08:45, 12:30, 15:15, 18:45

Event	12-hour	24-hour
A netball	8:45 am	08:45
B lunch	12:30 pm	12:30
C cinema	3:15 pm	15:15
D dinner	6:45 pm	18:45

The figure shows a horizontal timeline starting at 07:00 and ending at 19:00. Major tick marks are labeled every hour (07:00, 08:00, 09:00, 10:00, 11:00, 12:00, 13:00, 14:00, 15:00, 16:00, 17:00, 18:00, 19:00). Between each hour, there are four smaller tick marks, representing 15-minute intervals. Four yellow arrows point downwards to specific times on the timeline: Arrow A points to 08:45, Arrow B points to 12:30, Arrow C points to 15:15, and Arrow D points to 18:45.

3

a) 8:45 am = 08:45; 12:30 pm = 12:30; 3:15 pm = 15:15; 6:45 pm = 18:45.
b) Each small tick is 15 minutes.

1 mark: all four 24-hour times.

2 marks: all four marked on the timeline (1 mark for two or three).

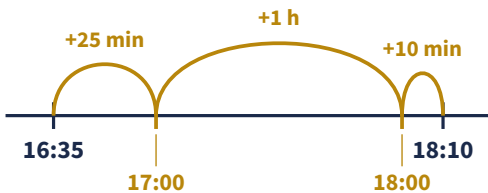
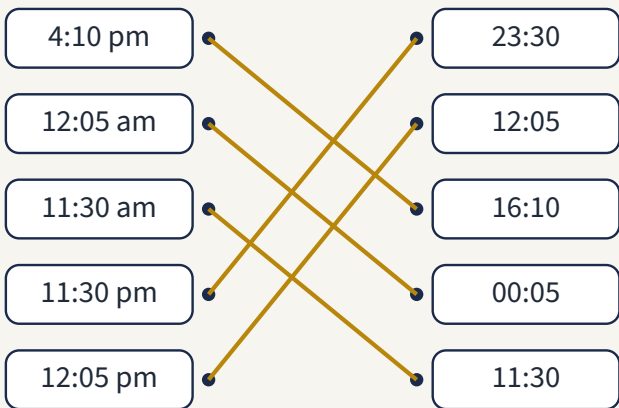
2 a) 3:31 pm b) 34 min c) Bus 3, 16:11 (4:11 pm)

Bus 599: Southern River to Aubin Grove				
Stop	Bus 1	Bus 2	Bus 3	Bus 4
Southern River	14:52	15:22	15:52	16:22
Harrisdale	15:01	15:31	16:02	16:31
Piara Waters	15:09	15:40	16:11	16:40
Aubin Grove Stn	15:22	15:54	16:26	16:55

3

a) Bus 2 leaves Harrisdale at 15:31. $15 - 12 = 3$, so 3:31 pm.
b) 15:52 to 16:26: 8 min to 16:00, then 26 min: 34 min.
c) 4:30 pm = 16:30. Bus 3 arrives 16:26 (in time); Bus 4 arrives 16:55 (too late). Bus 3 leaves Piara Waters at 16:11.

1 mark for each part. In c) accept Bus 3 or 16:11 / 4:11 pm.

Q	Answer	Working / sample response	Marks																				
3	1 h 35 min	 16:35 → 17:00 is 25 min, 17:00 → 18:00 is 1 h, 18:00 → 18:10 is 10 min. 25 min + 1 h + 10 min = 1 h 35 min. <i>1 mark: sensible jumps shown.</i> <i>1 mark: 1 h 35 min.</i>	2																				
4	16:35	 The cake goes in at 3:50 pm = 15:50. 15:50 + 10 min = 16:00, then 35 min more: 16:35 (4:35 pm). <i>1 mark: hands drawn at 4:35.</i> <i>1 mark: 16:35.</i>	2																				
5	a) 7:23 pm b) 1 h 58 min c) 1 Jan, 1 Apr, 1 Oct	a) $19 - 12 = 7$: 7:23 pm. b) 17:25 → 19:25 is 2 h, so 17:25 → 19:23 is 2 min less: 1 h 58 min. c) 6:00 pm = 18:00. Sunset is after 18:00 on 1 January (19:23), 1 April (18:12) and 1 October (18:11), but not 1 July (17:25). <i>1 mark for each part (c needs all three dates).</i>	3																				
6	See lines	 4:10 pm = 16:10; 12:05 am = 00:05; 11:30 am = 11:30; 11:30 pm = 23:30; 12:05 pm = 12:05. <i>2 marks: all five correct. 1 mark: three or four correct.</i>	2																				
7	See table	<table border="1"> <thead> <tr> <th>Activity</th><th>Start</th><th>Duration</th><th>Finish</th></tr> </thead> <tbody> <tr> <td>Canoeing</td><td>09:15</td><td>1 h 20 min</td><td>10:35</td></tr> <tr> <td>Morning tea</td><td>10:35</td><td>20 min</td><td>10:55</td></tr> <tr> <td>Archery</td><td>10:55</td><td>1 h 15 min</td><td>12:10</td></tr> <tr> <td>Lunch</td><td>12:10</td><td>50 min</td><td>13:00</td></tr> </tbody> </table> 09:15 + 1 h 20 min = 10:35. 10:35 + 20 min = 10:55. 10:55 to 12:10 = 5 min + 1 h + 10 min = 1 h 15 min. 12:10 + 50 min = 13:00. <i>3 marks: all seven blanks correct. 2 marks: five or six. 1 mark: three or four.</i>	Activity	Start	Duration	Finish	Canoeing	09:15	1 h 20 min	10:35	Morning tea	10:35	20 min	10:55	Archery	10:55	1 h 15 min	12:10	Lunch	12:10	50 min	13:00	3
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Canoeing	09:15	1 h 20 min	10:35																				
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Q	Answer	Working / sample response	Marks
8	00:20, 7:50 am, 12:45 pm, 13:05, 18:15, 6:30 pm	In 24-hour time: 07:50, 13:05, 12:45, 00:20, 18:30, 18:15. Order: 00:20, 07:50, 12:45, 13:05, 18:15, 18:30. <i>2 marks: all in order. 1 mark: one pair swapped (e.g. 6:30 pm before 18:15).</i>	2
9	a) 5 h 45 min b) 2:25 pm	a) 08:40 → 09:00 is 20 min, 09:00 → 14:00 is 5 h, 14:00 → 14:25 is 25 min: 5 h 45 min. b) 14 – 12 = 2: 2:25 pm. <i>1 mark: 5 h 45 min.</i> <i>1 mark: 2:25 pm.</i>	2

C

Think it through *sample answers and criteria*

/ 10 marks

Q	Answer	Working / sample response	Marks
1	No: 5 pm	For pm times, 24-hour time adds 12 to the hour, so you subtract 12 to go back. 17 – 12 = 5, so 17:00 is 5 pm. (7 pm is 19:00.) <i>1 mark: No, 5 pm.</i> <i>1 mark: explains subtracting 12.</i>	2
2	No: 1 h 30 min	An hour has 60 minutes, not 100, so you cannot subtract times like ordinary numbers (and 70 minutes is more than an hour). 10:45 → 11:00 is 15 min, 11:00 → 12:00 is 1 h, 12:00 → 12:15 is 15 min: 1 h 30 min. <i>1 mark: explains 60 minutes in an hour.</i> <i>1 mark: 1 h 30 min.</i>	2
3	False	12:15 pm is 15 minutes after noon , which is 12:15 in 24-hour time. 00:15 is 15 minutes after midnight , which is 12:15 am. <i>1 mark: False.</i> <i>1 mark: explains 12:15 pm = 12:15 (after noon) and 00:15 = 12:15 am (after midnight).</i>	2
4	Sometimes	Always Sometimes Never It works for pm times from 1 pm to 11:59 pm: 3:15 pm = 15:15. It does not work for am times (8:00 am = 08:00, not 20:00) or for times from 12 noon to 12:59 pm (12:30 pm = 12:30, not 24:30). <i>1 mark: Sometimes.</i> <i>1 mark: one example where it works and one where it does not.</i>	2
5	06:45	Quarter to seven in the evening = 6:45 pm = 18:45. 06:45 is 6:45 am, in the morning. <i>1 mark: 06:45.</i> <i>1 mark: explains the others are all 6:45 pm (18:45).</i>	2

D

Challenge *solutions and criteria*

/ 9 marks

Q	Answer	Working / sample response	Marks
1	a) 00:00, 11:11, 22:22 b) 11 h 11 min, 11 h 11 min, 1 h 38 min	a) Hours 00, 11, 22 work. 33:33 and higher are not real times (hours stop at 23, minutes at 59). b) 00:00 → 11:11 = 11 h 11 min; 11:11 → 22:22 = 11 h 11 min; 22:22 → 00:00 = 38 min + 1 h = 1 h 38 min. <i>1 mark: all three times (no extras).</i> <i>1 mark: 11 h 11 min.</i> <i>1 mark: 1 h 38 min.</i>	3
2	a) 14 h 11 min b) 9 h 50 min	a) 05:12 → 19:12 is 14 h, then 11 min more: 14 h 11 min. b) 19:23 → 20:00 is 37 min, 20:00 → 00:00 (midnight) is 4 h, 00:00 → 05:13 is 5 h 13 min. 37 min + 4 h + 5 h 13 min = 9 h 50 min. <i>1 mark: 14 h 11 min.</i> <i>1 mark: crosses midnight correctly.</i> <i>1 mark: 9 h 50 min.</i>	3
3	6:13 pm	Train + walk = 28 + 12 = 40 min. The 18:37 train gets her to the gate at 19:17 (too late). The 18:22 train gets her to the gate at 19:02 (in time). She leaves home 9 min before 18:22: 18:13 = 6:13 pm. <i>1 mark: 40 minutes of travel after the train leaves.</i> <i>1 mark: the 18:22 train.</i> <i>1 mark: 6:13 pm.</i>	3