Exercise 23

Measurement

Time - 24 hour Clock

At the end of this exercise you will:

• Why the 24-hour clock is used
• Learn how to use the 24-hour clock
• Converting am to pm to the 24-hour system
• Marking parking discs
• Looking at Timetables

Answers on page 6 of this exercise.
Why do you need to know how to use the 24-hour clock?

The 24-hour clock is used to help people to avoid making mistakes with the am or pm.

You arrived at the ferry port to catch a ferry at 9 o’clock in the evening and you find that the ferry has sailed, at 9 o’clock that morning, you wouldn’t be very happy.

This is why the 24-hour clock system is used, to stop people making mistakes between am and pm.

Timetables for buses, coaches, trains, aeroplanes and ferries all round the world, and not forgetting some parking discs, operate the 24-hour system.

So if we want to travel a short distance or a long distance we have to know how to read the 24-hour system.

How does the 24-hour work?
If you look at the clock above you will see that on top of the bold black numbers there is a smaller number in red. Have a look at the 7 o’clock, can you see the 19 above it.

This means it could be 7 o’clock in the morning or 19.00 hours in the evening. All we have to do is to work out if the time is before or after midday (12 noon) to get the right time.

Each hour is given its own number from 1 to 24, this stops any confusion with the time, and also the 24-hour clock is also read as a digital clock.

So we need to remember that: The numbers on the clock face above from 1 to 12 are for midnight (being 0) to midday (being 12).

The red numbers from 13 to 23 (24 is not shown) are for midday (being 12) to midnight (being 24).
Converting *am* and *pm* times to the 24-hour clock.

<table>
<thead>
<tr>
<th>12-hour clock</th>
<th>24-hour clock</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 o’clock in the morning</td>
<td>08.00</td>
</tr>
<tr>
<td>8 o’clock in the evening</td>
<td>20.00</td>
</tr>
<tr>
<td>12 o’clock midday</td>
<td>12.00</td>
</tr>
<tr>
<td>12 o’clock midnight</td>
<td>00.00</td>
</tr>
<tr>
<td>1 o’clock in the afternoon</td>
<td>01.00</td>
</tr>
<tr>
<td>6 o’clock in the morning</td>
<td>06.00</td>
</tr>
<tr>
<td>6 o’clock in the evening</td>
<td>18.00</td>
</tr>
<tr>
<td>9 o’clock in the morning</td>
<td>09.00</td>
</tr>
<tr>
<td>9 o’clock in the evening</td>
<td>21.00</td>
</tr>
</tbody>
</table>

If you look at the times above you can see that 12 hours is added to the morning time to get the evening time. So if someone says to you that the time is 23.00 hour, all you need to do is to take 12 away from the 23 to get 11 o’clock.

Exercise 1: **Convert these times:** The first three are done for you.

<table>
<thead>
<tr>
<th>12-hour clock</th>
<th>24-hour clock</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quarter past seven in the morning</td>
<td>07.45</td>
</tr>
<tr>
<td>Twenty to one in the afternoon</td>
<td>12.40</td>
</tr>
<tr>
<td>Ten to six in the evening</td>
<td>17.50</td>
</tr>
<tr>
<td>Twenty-five to ten</td>
<td>18.15</td>
</tr>
<tr>
<td>Five past twelve in the afternoon</td>
<td>19.15</td>
</tr>
<tr>
<td></td>
<td>21.45</td>
</tr>
<tr>
<td>Half past eight in the morning</td>
<td>08.30</td>
</tr>
<tr>
<td>Ten to twelve at night</td>
<td>16.30</td>
</tr>
<tr>
<td>Twenty to 9 in the morning</td>
<td>17.30</td>
</tr>
<tr>
<td>Twenty past 2 in the afternoon</td>
<td>18.25</td>
</tr>
<tr>
<td>7 o’clock in the evening</td>
<td>19.00</td>
</tr>
<tr>
<td></td>
<td>20.25</td>
</tr>
<tr>
<td>Five to six in the evening</td>
<td>20.25</td>
</tr>
<tr>
<td></td>
<td>14.35</td>
</tr>
<tr>
<td></td>
<td>01.25</td>
</tr>
</tbody>
</table>
Exercise 2: Parking discs

This is the type of parking that has been used by various councils, which has been replaced by an easier parking ticket, by a few councils.

You must put two holes in the disc to represent the time that you arrived at the parking place.

First hole for the minutes, the other hole for the hour.

If you arrive at the parking space at twenty-five past 3 (3.25) you put a hole in the 25 for the minutes and a hole in the 15 for the hour. Like so:

Exercise 2:

Mark the parking time, for the various times below, that you arrive at the parking space: -

a. Quarter to nine in the morning  
b. Five past five in the afternoon 
c. Five to twelve in the morning  
d. Half past one in the afternoon  
e. Nine o’clock in the morning  
f. Twenty to three in the afternoon 
g. Ten past one in the afternoon  
h. Ten to ten in the morning
**Timetables**

Let's look at a timetable from **INTERCITY** for Dublin, Westport and Ballina.

You want to go to Heuston Station in Dublin from Claremorris and you must be in Dublin by 6.30pm on a Sunday. What time train will you catch and what time will it arrive at Heuston?

The time to leave Claremorris is at 15.10.
The nearest arrival time to Heuston before 6.30pm is 18.13.

**So that is the train that you would catch.**

**Exercise 3:**

Try the following questions:

1. What is the earliest time you can get to Heuston station of a morning?

2. What is the latest you can catch a train to arrive at twenty-six minutes to four in the afternoon, from Castlebar?

3. You arrive at Kildare station by train at 18.44, what day is it and what time did you leave Westport station?

4. You are on the one minute to seven train, in the evening from Ballyhaunis, what time does the train depart from Portarlington?

5. During the week, how long is the scheduled wait at Manulla Junction?

6. You are on the twenty past one train in the afternoon, from Westport during the week, what time does the train arrive at Tullamore?
Answers

Page 3

Converting am and pm times to the 24-hour clock.

Quarter past seven in the morning 7.15
Twenty to one in the afternoon 12.40
Ten to six in the evening 17.50
Twenty-five to ten 9.35
Five past twelve in the afternoon 12.05
Quarter past six in the evening 18.15
Quarter to ten at night 21.45
Half past eight in the morning 8.30
Ten to twelve at night 23.50
Half past four in the afternoon 16.30
Twenty to 9 in the morning 8.40
Twenty past 2 in the afternoon 14.20
7 o’clock in the evening 19.00
Twenty-five past eight 20.25
Five to six in the evening 5.55
Twenty-five to three in the afternoon 14.35
Twenty-five past one in the morning 1.25

Page 4 Exercise 2: Parking Discs

Put a hole in the parking disc in the outer circle of numbers for the hours and the inner circle for the minutes.

a. 8.45  b. 17.05  c. 11.55  d. 13.30
e. 9.00  f. 14.40  g. 13.10  h. 9.50

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Exercise 3: Timetables

1. 10.40  2. 13.35  3. A Sunday. Left at 15.40
4. 20.59  5. 1 minute  6. 15.45