

Time

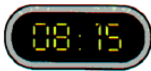
There are two types of clock. An **analogue** clock uses the 12-hour system. Its hands show 10:15 like this:



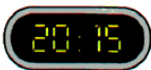
We can't tell from the time on the clock whether this is 10:15 am or 10:15 pm.

A digital clock can use both the 12-hour and 24-hour system. It usually uses four digits and a colon to separate hours and minutes.

To find the 24-hour time you add 12 to the 12-hour time. So 8:15 am would be shown like this:



while 8:15 pm would be shown like this:



The four clocks below show the time that Jamil gets up (clock A), has lunch (clock B), finishes work (clock C) and goes to bed (clock D).



- a Fill in the table to show the time of each clock using the 12-hour and 24-hour clock.

Clock	A	B	C	D
12-hour	6.30 am			11.00 pm
24-hour		12:45	17:15	

- b How long is there between Jamil getting up and going to bed?
 c If Jamil starts work at 8.30 and takes an hour for lunch, how many hours is he at work?

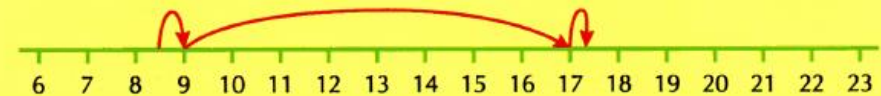
- 6:30 am is 06:30 hours, 12:45 hours is 12:45 pm, 17:15 hours is 5:15 pm and 11:00 pm is 23:00 hours.

- Jamil gets up at 06:30 hours and goes to bed at 23:00 hours. To work out the difference, use a time line:



From 06:30 to 07:00 is 30 minutes. From 07:00 to 23:00 is 16 hours.
 The answer is 16 hours and 30 minutes.

- 08:30 to 09:00 is 30 minutes, 09:00 to 17:00 is 8 hours and 17:00 to 17:15 is 15 minutes.



Total time is 8 hours plus 30 minutes plus 15 minutes less 1 hour for lunch
 = 7 hours and 45 minutes.

Time can be measured in different units, depending on how long an event or activity lasts.

1 millennium	is the same as	1000 years
1 century	...	100 years
1 decade	...	10 years
1 year	...	12 months or 52 weeks or 365 days
1 week	...	7 days
1 day	...	24 hours (24 h)
1 hour (1 h)	...	60 minutes (60 min)
1 minute (1 min)	...	60 seconds (60 s)

Different types of events need different levels of accuracy. A 100m sprint at the Olympic Games needs to be measured in fractions of seconds, but a 10km fun run in the park can be measured in minutes and seconds.

Converting Time

Sometimes you need to convert one unit of time to another. This can help make comparisons between different activities, or can help you in calculations. It is also useful to be able to estimate how long activities take.

a Andy is 70 years old today. What is his age in: **i** decades **ii** months?

b How many hours are there in 200 minutes?

a i A decade is 10 years so $70 \div 10 = 7$ decades.

ii 1 year = 12 months, so $70 \times 12 = 840$ months.

b 60 minutes = 1 hour so 200 minutes = $200 \div 60 = 3$ hours 20 minutes.