



# Time

Mana Maths

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# Te reo Māori terms



**tāima**

time

Open in Te Aka

**karaka mati**

digital clock

Open in Te Aka

**karaka ringa**

analogue clock

Open in Te Aka

**meneti**

minute

Open in Te Aka

# Notes & Steps



## Key idea

Time conversions use fixed facts:  $1 \text{ h} = 60 \text{ min}$ ,  $1 \text{ min} = 60 \text{ s}$ ,  $1 \text{ day} = 24 \text{ h}$ . Elapsed time is the difference between a start and finish time.

## Steps

1. Convert to the same unit if needed.
2. Use 24-hour time if it helps avoid mistakes.
3. For elapsed time, count up from the start to the end.
4. For finish time, add the duration to the start time.

## Key facts

- ▶  $2 \text{ h} = 120 \text{ min}$
- ▶  $3 \text{ min} = 180 \text{ s}$
- ▶ 15:30 is 3:30 pm
- ▶  $90 \text{ min} = 1 \text{ h } 30 \text{ min}$

## Common mistake

Treating 2.5 hours as 2 hours 50 minutes. Since 0.5 of an hour is half of 60 minutes, 2.5 hours is 2 hours 30 minutes.

## Try these

1. Convert 150 min to hours and minutes.
2. Convert 7:15 pm to 24-hour time.
3. Find the time 45 minutes after 2:30 pm.

# Notes & Steps



## Example 1: elapsed time

A train leaves at 8:45 am and arrives at 11:20 am.

$$8:45 \rightarrow 9:00 = 15 \text{ min}$$

$$9:00 \rightarrow 11:00 = 2 \text{ h}$$

$$11:00 \rightarrow 11:20 = 20 \text{ min}$$

Total: 2 h 35 min.

## Example 2: finish time

A movie starts at 14:30 and lasts 1 h 55 min.

$$14:30 + 1 \text{ h} = 15:30$$

$$15:30 + 55 \text{ min} = 16:25$$

Finish time: 16:25.

## Example 3: speed

A car travels 240 km in 3 h.

$$\text{speed} = \frac{240}{3} = 80 \text{ km/h}$$

## Example 4: decimal hours

Convert 1.6 h to minutes.

$$1.6 \times 60 = 96 \text{ min}$$

# Start Tasks



**1.** Convert 2 h to minutes.

**2.** Convert 3.5 h to minutes.

**3.** Convert 5 min to seconds.

**4.** Convert 2.5 min to seconds.

**5.** Convert 3 days to hours.

**6.** Convert 120 min to hours.

**7.** Convert 90 min to hours and minutes.

**8.** What time is 45 min after 2:30 pm?

**9.** Start 9:00 am, end 11:30 am. How long?

# Time – Answers



1. 120 min

2. 210 min

3. 300 s

4. 150 s

5. 72 h

6. 2 h

7. 1 h 30 min

8. 3:15 pm

9. 2 h 30 min

# Start Tasks



**10.** Convert 3:00 pm to 24-hour time.

**11.** Add  
 $1 \text{ h } 20 \text{ min} + 45 \text{ min}$ .

**12.** Convert 4 h to minutes.

**13.** Convert 240 s to minutes.

**14.** What time is 30 min before 8:10 am?

**15.** What time is 1 h after 6:25 pm?

**16.** Convert 18:40 to 12-hour time.

**17.** How many minutes in 2 h 15 min?

**18.** How many seconds in 3 min?

# Time – Answers



10. 15:00

11. 2 h 5 min

12. 240 min

13. 4 min

14. 7:40 am

15. 7:25 pm

16. 6:40 pm

17. 135 min

18. 180 s

# Start Tasks



**19.** Convert 150 min to h and min.

**20.** Convert 5400 s to minutes.

**21.** Start 1:15 pm, end 2:05 pm. How long?

**22.** What time is 20 min after 11:50 am?

**23.** What time is 35 min before 4:00 pm?

**24.** Convert 07:45 to 12-hour time.

**25.** Convert 9:20 pm to 24-hour time.

**26.** Add  
2 h 35 min + 50 min.

**27.** Convert 1.25 h to minutes.

# Time – Answers



19. 2 h 30 min

20. 90 min

21. 50 min

22. 12:10 pm

23. 3:25 pm

24. 7:45 am

25. 21:20

26. 3 h 25 min

27. 75 min

# Build Tasks



**1.** A train leaves 8:45 am and arrives 11:20 am. Journey time?

**2.** Convert 15:30 to 12-hour time.

**3.** Convert 7:15 pm to 24-hour time.

**4.** How many minutes from 9:50 am to 11:15 am?

**5.** A movie starts 14:30 and lasts 1 h 55 min. End time?

**6.** School starts 8:50 am and lunch is 12:15 pm. Time until lunch?

**7.** A bus trip takes 2 h 35 min. It leaves 10:45 am. Arrival?

**8.** Convert 3.75 h to h and min.

**9.** Convert 150 min to h and min.

# Time – Answers



1. 2 h 35 min

2. 3:30 pm

3. 19:15

4. 85 min

5. 16:25

6. 3 h 25 min

7. 1:20 pm

8. 3 h 45 min

9. 2 h 30 min

# Build Tasks



**10.** Cooking takes 45 min. Start 5:20 pm. Finish time?

**11.** A game starts 6:40 pm and ends 8:05 pm. Duration?

**12.** How many minutes from 13:25 to 15:00?

**13.** Convert 00:15 to 12-hour time.

**14.** Convert 12:00 noon to 24-hour time.

**15.** A lesson lasts 55 min. It starts 11:10 am. Finish time?

**16.** What time was it 1 h 20 min before 4:35 pm?

**17.** Convert 225 min to h and min.

**18.** Convert 2 h 45 min to minutes.

# Time – Answers



10. 6:05 pm

11. 1 h 25 min

12. 95 min

13. 12:15 am

14. 12:00

15. 12:05 pm

16. 3:15 pm

17. 3 h 45 min

18. 165 min

# Build Tasks



**19.** How many seconds are in 12 min?

**20.** A ferry leaves 07:25 and arrives 09:05. Trip time?

**21.** From 10:58 am to 12:03 pm is how many minutes?

**22.** A meeting starts 3:15 pm and lasts 2 h 10 min. End time?

**23.** Convert 1.6 h to minutes.

**24.** Convert 95 min to h and min.

**25.** A worker starts 8:05 am and works 7 h 30 min. Finish time?

**26.** Convert 21:50 to 12-hour time.

**27.** Convert 11:55 pm to 24-hour time.

# Time – Answers



19. 720 s

20. 1 h 40 min

21. 65 min

22. 5:25 pm

23. 96 min

24. 1 h 35 min

25. 3:35 pm

26. 9:50 pm

27. 23:55

# Push Tasks



**1.** A car travels 240 km in 3 h. Average speed in km/h?

**2.** A runner covers 1500 m in 5 min. Speed in m/s?

**3.** A cyclist travels 36 km at 12 km/h. Start 9:15 am. Finish time?

**4.** London flight leaves 10:00 GMT and lasts 12 h. Auckland is GMT+12. Arrival local time?

**5.** A job takes 6 h 45 min. Two people split it evenly. Time each?

**6.** Water heats from 20°C to 100°C at 2°C per min. How long?

**7.** A student says 2.5 h = 2 h 50 min. Correct or not?

**8.** A movie runs 7:15 pm to 9:55 pm with 20 min of ads. Actual movie time?

**9.** A bus drives 180 km at 60 km/h. It leaves 1:40 pm. Arrival?

# Time — Answers



1. 80 km/h

2. 5 m/s

3. 12:15 pm

4. next day 10:00

5. 3 h 22.5 min

6. 40 min

7. No

8. 2 h

9. 4:40 pm

# Push Tasks



**10.** A flight departs 06:45 and lands 14:20 with a 3 h time difference. Flight time?

**11.** A swimmer does 100 m in 80 s. Speed in m/s?

**12.** A train averages 90 km/h for 2 h 20 min. Distance?

**13.** A plane flies 840 km in 1 h 20 min. Average speed?

**14.** How long from 11:35 pm to 1:10 am next day?

**15.** A worker starts 7:55 am, breaks 35 min, finishes 4:20 pm. Working time?

**16.** A car travels at 72 km/h. How far in 25 min?

**17.** A package is processed every 45 s. How many in 12 min?

**18.** A baker starts at 4:30 am and works 8 h 45 min. Finish time?

# Time – Answers



10. 4 h 35 min

11. 1.25 m/s

12. 210 km

13. 630 km/h

14. 1 h 35 min

15. 7 h 50 min

16. 30 km

17. 16

18. 1:15 pm

# Push Tasks



**19.** A game has four quarters of 12 min and three 2 min breaks. Total time?

**20.** A rocket stage burns for 2 min 30 s. How many seconds?

**21.** At 36 km/h, how many metres are travelled in 10 s?

**22.** A runner keeps 5 m/s for 4 min. Distance?

**23.** A machine makes 18 parts in 6 min. Rate per hour?

**24.** A class begins 9:10 am. Two 52 min periods and a 15 min break. Finish time?

**25.** If New York is GMT-4 and Auckland is GMT+12, what is the time difference?

**26.** A call starts 21:40 in Auckland and lasts 50 min. What time does it end?

**27.** A bus leaves every 18 min. How many departures in 3 h?

# Time – Answers



19. 54 min

20. 150 s

21. 100 m

22. 1200 m

23. 180/h

24. 10:09 am

25. 16 h

26. 22:30

27. 10