Cambridge IGCSE · Mathematics (0580) · Notes

# Calculators, time and money

Read online at pastopic.com/cambridge/mathematics-0580/notes/calculators-time-and-money

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Read first: Fractions, decimals, ordering and the four operations, Estimation and limits of accuracy



## What you need to know

Core and Extended have exactly the same content for this topic, so everything here is for both tiers; nothing is Extended only. By the end of this topic you should be able to:

1. **Use a calculator efficiently.** Keep every figure the calculator gives you while you work, and round only the final answer.
2. **Enter values in the right form.** For example, enter 2 hours 30 minutes as $2.5$ hours (or with the degrees–minutes–seconds key as $2^\circ\ 30'\ 0''$), and put brackets round a whole numerator, denominator or expression under a root.
3. **Read the display sensibly.** $4.8$ on the screen is $\$4.80$ when the answer is money, and $3.25$ is $3$ hours $15$ minutes when the answer is a time in hours.
4. **Calculate with time** in seconds, minutes, hours, days, weeks, months and years, and change between these units (a year is $365$ days).
5. **Use the 24-hour and 12-hour clocks** and change between them: 3.15 am is $03\,15$ and 3.15 pm is $15\,15$.
6. **Read clocks and timetables**, including problems with time zones, local times and time differences.
7. **Calculate with money**: bills, change, pay, hire charges and the most you can buy.
8. **Convert from one currency to another** using an exchange rate.

Paper 1 and Paper 2 have no calculator, so items 1–3 are tested on Papers 3 and 4; time and money come up on every paper.

## Understand it

### Time is not decimal

There are $60$ seconds in a minute and $60$ minutes in an hour, not $100$. This is the idea behind almost every mistake in this topic.

| Unit | Equals |
|---|---|
| $1$ minute | $60$ seconds |

| Unit | Equals |
|---|---|
| 1 hour | 60 minutes = 3600 seconds |
| 1 day | 24 hours = 86 400 seconds |
| 1 week | 7 days = 168 hours |
| 1 year | 12 months = 52 weeks (and a day) = 365 days |

To change a big unit into a small one, **multiply**; to change a small unit into a big one, **divide**. So $4.5$ hours $= 4.5 \times 3600 = 16\,200$ seconds, $5$ years $= 5 \times 12 = 60$ months and $10$ weeks $= 70$ days.

**Decimal hours.** A calculator gives time in hours as a decimal. The part after the point is a **fraction of an hour**, not a number of minutes:

- $3.25$ hours $= 3$ hours $+ 0.25 \times 60$ minutes $= 3$ h $15$ min.
- $2.4$ hours $= 2$ h $+ 0.4 \times 60$ min $= 2$ h $24$ min, **not** $2$ h $40$ min.

Going the other way, divide the minutes by $60$: $2$ h $40$ min $= 2 + \frac{40}{60} = 2.666\ldots$ hours. Type it as `2 + 40 ÷ 60`, or use the degrees–minutes–seconds key (° ' "), which does this for you.

## The 24-hour clock

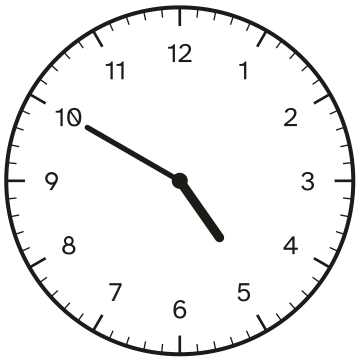
The 12-hour clock restarts at midnight and at midday, so it needs am (midnight to midday) or pm (midday to midnight). The 24-hour clock keeps counting after midday, so it needs no am or pm. It is always written with **four digits**: two for the hour, two for the minutes.

- Morning: keep the hours and add a leading zero if needed: 3.15 am $= 03\,15$.
- Afternoon and evening: add $12$ to the hours: 3.15 pm $= 15\,15$; 11.40 pm $= 23\,40$.
- Midday hour: 12.45 pm $= 12\,45$. Midnight hour: 12.20 am $= 00\,20$.

Never write "pm" after a 24-hour time, and never leave it off a 12-hour time.

## Reading a clock face

On an analogue clock the long hand shows minutes (each number is $5$ minutes) and the short hand shows hours. The hour hand moves slowly between the numbers as the hour goes on, so at ten to five it is almost on the $5$ but the hour is still $4$.




Minute hand on 10: 50 minutes past

Hour hand past 4, nearly 5: hour is 4

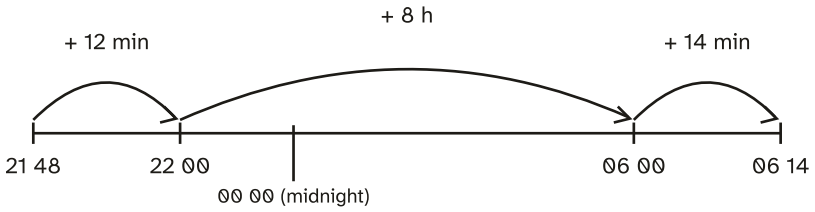
Time: 4.50 (ten to five)

Morning: 4.50 am = 04 50

Afternoon: 4.50 pm = 16 50

## Finding how long something takes: count up

To find the time between two clock times, **count up in easy jumps**: first to the next whole hour, then whole hours, then the leftover minutes. This avoids subtracting times as if they were ordinary numbers, and it deals with midnight automatically.




12 min + 8 h + 14 min = 8 h 26 min

To add a length of time, add the hours and the minutes separately, then turn every $60$ minutes into an hour. If the hours reach $24$ or more, take off $24$: it is the next day.

## Time zones

Places around the world set their clocks differently. "Tokyo is $9$ hours **ahead** of London" means Tokyo's clocks show a later time: when it is $14\,30$ in London it is $23\,30$ in Tokyo. "New York is $5$ hours **behind** London" means New York shows an earlier time: $09\,30$.

For a flight between two time zones, work out the arrival time **in the departure city's time first** (departure time + flight time), then add or subtract the time difference to get the local time where the plane lands. Check whether the day changes at each step.

## Timetables

A timetable lists the times a bus or train reaches each stop, one column per journey. Read down a column to follow one journey. If every journey takes the same time, find the time between two stops in one column and add it on in another.

### Money

Money has two decimal places because there are $100$ cents in a dollar (or pence in a pound). So:

- $345$ cents $= \$3.45$; to change cents to dollars, divide by $100$.
- A calculator display of $4.8$ means $\$4.80$. Always write money with **two** decimal places (or none, for a whole number of dollars such as $\$400$).

Everyday money problems use the four operations: **cost = quantity × price** (for example $3.4$ kg at $\$4.60$ per kg), **change = amount paid − total cost**, and **pay = hours × hourly rate**. "Time and a half" or "$1\frac{1}{2}$ times the normal rate" means the hourly rate multiplied by $1.5$.

### Exchange rates

An exchange rate says how much one unit of one currency is worth in another, for example $\$1 = 0.85$ euros.

- Going **from** the currency that has the $1$: **multiply**. $\$250 = 250 \times 0.85 = 212.50$ euros.
- Going **to** the currency that has the $1$: **divide**. $212.50$ euros $= 212.50 \div 0.85 = \$250$.

A quick sense-check tells you if you have it the wrong way round: here a dollar is worth less than one euro, so a number of dollars must turn into a **smaller** number of euros.

### Using a calculator well

- **Keep every figure.** Don't round in the middle. Either do the whole calculation in one go, or store answers in the memory (or use the `Ans` key).
- **Use brackets.** A fraction bar groups everything above it and everything below it; a root sign groups everything under it. For $\dfrac{21.4 + 35.9}{\sqrt{9.3^2 - 4.2^2}}$, type `(21.4 + 35.9) ÷ √(9.3² − 4.2²)`, or use the fraction template. Without brackets the calculator divides only $35.9$.
- **Write down the full display** before you round, then round as the question asks. That way a wrong rounding still earns a method mark.

## Key facts and formulas

None of these is in the List of formulas printed on the exam paper, so learn them all. Exchange rates are always given in the question.

| Formula | Status |
|---|---|
| $1$ min $= 60$ s, $1$ h $= 60$ min $= 3600$ s, $1$ day $= 24$ h | Learn it |
| $1$ week $= 7$ days, $1$ year $= 12$ months $= 365$ days (about $52$ weeks) | Learn it |
| Decimal hours to minutes: minutes $=$ decimal part $\times 60$ | Learn it |
| Minutes to decimal hours: hours $= \dfrac{\text{minutes}}{60}$ | Learn it |

| Formula | Status |
|---|---|
| pm times in the 24-hour clock: add $12$ to the hour (except 12 pm) | Learn it |
| Ahead: add the time difference; behind: subtract it | Learn it |
| Cost $=$ quantity $\times$ price; change $=$ amount paid $-$ total cost | Learn it |
| Pay $=$ hours $\times$ rate; "time and a half" $= 1.5\times$ rate | Learn it |
| Largest number you can buy $=$ money $\div$ price, rounded **down** | Learn it |
| $\$1 = r$ units: dollars $\rightarrow$ units multiply by $r$; units $\rightarrow$ dollars divide by $r$ | Learn it |
| $100$ cents $= \$1$; money to $2$ decimal places | Learn it |

## How to do it

In the Paper 1–4 questions we have tagged for this topic (146 questions, 2021–2025, of which 131 are different; the rest appear on two papers), the types came up this often. Counts are of the 131 different questions; 17 of them mix two or three types, so the counts add up to more than 131.

| Question type | Questions |
|---|---|
| Time: units, clocks, durations, timetables and time zones | 56 |
| Money: bills, change, pay and charges | 42 |
| Currency conversion with exchange rates | 29 |
| Calculator work and rounding | 24 |

### 1. Time: units, clocks, durations, timetables and time zones (56 questions)

**Finding how long something takes:**

1. Write both times in the 24-hour clock.
2. Count up from the start: to the next whole hour, then whole hours, then the leftover minutes.
3. Add the jumps and give the answer in hours **and** minutes. From $22\,50$ to $05\,35$ is $10$ min $+6$ h $+35$ min $= 6$ h $45$ min.

**Finding when something ends (or starts):**

1. Add the hours, then the minutes. $20\,25$ plus $85$ minutes: $85$ min $= 1$ h $25$ min, so $21\,50$.
2. If the minutes reach $60$ or more, take off $60$ and add $1$ hour. If the hours reach $24$ or more, take off $24$: it is the next day.
3. To find a start time, count **back**: a film that lasts $2$ h $45$ min and ends at $22\,10$ started $3$ hours earlier ($19\,10$) plus $15$ minutes, so at $19\,25$.

**Variations you will meet:**

- **Changing units.** Seconds in $4.5$ hours: $4.5 \times 3600 = 16\,200$. Months in $5$ years: $60$. Days in $10$ weeks: $70$. For ages: $2$ years $7$ months $= 31$ months.
- **Decimal hours.** $11$ h $15$ min $= 11.25$ h. $1.35$ h $= 1.35 \times 60 = 81$ min (not $95$). When a speed or rate calculation gives time as a decimal, change it to hours and minutes at the end.
- **12-hour and 24-hour clock.** Change either way, and give "am" or "pm" with every 12-hour time.
- **Reading a clock face**, or drawing the hands: the hour hand sits between the numbers, nearer the next hour as the minutes go on.
- **Timetables.** Read down the right column. To find a journey time, count up between two times in the same column. If all journeys take the same time, add that time to another start: $08\,26 \rightarrow 09\,14$ is $48$ min, so a train leaving at $10\,52$ arrives at $11\,40$. If you arrive at a stop, the next bus is the first one **at or after** that time.
- **Total working or opening hours.** Find the hours for each part of the day (for example $08\,30$ to $12\,00$ and $13\,00$ to $16\,45$ is $3.5 + 3.75 = 7.25$ h, or $7$ h $15$ min), then multiply by the number of days.
- **Time zones and flights.** Departure time + flight time gives the arrival time in the departure city's time; then add the difference if the destination is ahead, subtract if it is behind. Give the **day** if asked. Leaving at $17\,20$ on Wednesday, flying $12$ h $55$ min to a place $7$ hours ahead: $17$ h $20$ min $+12$ h $55$ min $= 29$ h $75$ min $= 30$ h $15$ min, which is $1$ day $6$ h $15$ min, so $06\,15$ on Thursday at home, and $06\,15 + 7$ h $= 13\,15$ on Thursday local time.
- **Dates.** Work out the number of days needed (round **up** if a part-day is still a working day), then count on, remembering the start day counts as day $1$. Laying $1300$ tiles at $30$ an hour for $8$ hours a day takes $1300 \div 30 = 43.3\ldots$ hours, which is $43.3\ldots \div 8 = 5.4\ldots$ days, so $6$ days; starting on $3$ May, the work ends on $8$ May.

## 2. Money: bills, change, pay and charges (42 questions)

1. **Find each cost**: quantity $\times$ price. Watch the units: $250$ ml of juice at $\$3.40$ per litre is $0.25 \times 3.40 = \$0.85$; cents and dollars must not be mixed.
2. **Add** the costs to get the total.
3. **Change** $=$ the amount handed over $-$ the total.
4. **Write the answer in dollars and cents**, to 2 decimal places.

**Variations you will meet:**

- **Completing a bill** with a missing price: price $=$ cost $\div$ quantity, for example $\$9.90 \div 2.75$ kg $= \$3.60$ per kg.
- **The largest number you can buy, and the change.** Divide the money by the price and **round down**: $\$20 \div \$1.35 = 14.81\ldots$, so $14$ items. Then change $= 20 - 14 \times 1.35 = \$1.10$. The opposite happens when things must all fit: $530$ passengers in coaches of $48$ need $530 \div 48 = 11.04\ldots$, so $12$ coaches (round **up**).
- **Pay with overtime.** Pay the normal hours at the normal rate and the extra hours at the higher rate, then add. "$1\frac{1}{2}$ times" a rate of $\$12.40$ is $12.40 \times 1.5 = \$18.60$ per hour.

- **Fixed charge plus a rate.** A room costs $\$18.50$ for the first hour and $\$6.25$ for each extra hour. To find how many hours give a bill of $\$112.25$: take off the first hour ($112.25 - 18.50 = 93.75$), divide by the rate ($93.75 \div 6.25 = 15$ extra hours), then add the first hour back: $16$ hours. Some questions ask you to write the charge as a formula, such as $C = 6.25(h - 1) + 18.50$.
- **Working back from a total**: take off what you know, then divide. $4$ lemons at $35$ cents and $6$ limes cost $\$3.20$: $320 - 140 = 180$ cents, so one lime is $180 \div 6 = 30$ cents.
- **Money questions often lead into percentages** (tax, discount, profit) or **best value** (compare the cost of the same amount): those methods are in their own notes.

## 3. Currency conversion with exchange rates (29 questions)

1. **Find the side with the** $1$ in the exchange rate.
2. **Multiply** to go away from that currency; **divide** to go towards it.
3. **Sense-check**: the currency worth less per unit gives the bigger number.
4. **Round money to 2 decimal places** (the nearest cent), or as the question says.

**Variations you will meet:**

- **Comparing two prices in different currencies.** Change one price into the other currency, then subtract. Say which is cheaper and give the difference in the currency asked for.
- **Two different exchange rates.** When each currency is linked to a third one, go through the third: $1500$ euros at $1$ euro $= \$1.08$ is $\$1620$, and at $1$ rupee $= \$0.0121$ that is $1620 \div 0.0121 = 133\,884.30$ rupees. Don't round the middle value.
- **Changing, spending and changing back.** Convert, subtract what was spent, then convert the rest back with the same rate (the opposite operation).
- **Finding the exchange rate.** If $\$8750$ buys $8000$ francs, then $\$1 = 8000 \div 8750 = 0.9143$ francs (4 d.p.). Divide by the currency that is to have the $1$.
- **Prices per unit in different units and currencies**, such as fuel per gallon in one country and per litre in another: convert both to the same currency **and** the same unit before comparing.
- **Conversion graphs** are straight lines through the origin; reading them is covered in the graphs notes.

## 4. Calculator work and rounding (24 questions)

1. **Type the whole calculation at once**, with brackets round every numerator, denominator and root, or use the fraction and root templates.
2. **Write down the full display** (at least 4 or 5 figures).
3. **Round as asked**: significant figures, decimal places, or 3 significant figures if nothing is said.

For example, $\sqrt{\dfrac{6.3^2 + 4.1}{12.5}}$: type `√((6.3² + 4.1) ÷ 12.5)` to get $1.871683\ldots$, which is $1.87$ to 3 s.f.

**Variations you will meet:**

- **"Correct to 2 significant figures"** when the answer is $5.9973\ldots$ must be written $6.0$; the zero shows the accuracy. $6$ or $6.00$ loses the mark. The same applies to money: $\$22.80$, not $\$22.8$.
- **Powers, roots and reciprocals**: $5^{-2}$, $\sqrt[3]{0.729}$, $\frac{1}{0.4}$. Use the power, root and $x^{-1}$ keys; put negative numbers in brackets before squaring them.
- **Non-calculator papers** ask for simple ones such as $\sqrt{361}+1=20$; know your squares and cubes (see the powers and roots note).

## Worked examples

The bold codes show where marks are earned, as in Cambridge mark schemes. The number is how many marks.

- **M1** method mark: for a correct method, even if the numbers slip.
- **A1** accuracy mark: for a correct answer; it needs the M mark before it.
- **B1** mark for a correct result on its own, with no method needed.

### Example 1

(a) Use your calculator to work out $\dfrac{\sqrt{7.2^2+3.1}}{4.6-1.85}$. Give your answer correct to 4 significant figures. **[2]**

(b) Work out $5^{-2}+\sqrt[3]{0.729}$. **[1]**

**(a)** Type `√(7.2² + 3.1) ÷ (4.6 − 1.85)`. The top is $\sqrt{54.94}=7.41215\ldots$ and the bottom is $2.75$, so the display shows $2.69533\ldots$ **B1** for seeing $2.6953\ldots$ (or better).

Correct to 4 significant figures: $2.695$. **B1**

**(b)** $5^{-2}=\frac{1}{25}=0.04$ and $\sqrt[3]{0.729}=0.9$, so the answer is $0.94$. **B1**

### Example 2

A night train leaves at $21\,48$ and arrives at $06\,14$ the next day.

(a) Find how long the journey takes. **[1]**

(b) Write the arrival time using the 12-hour clock. **[1]**

(c) Write the journey time in hours, correct to 3 decimal places. **[1]**

(d) The journey is $596$ km. Calculate the average speed of the train. **[2]**

**(a)** Count up: $21\,48 \to 22\,00$ is $12$ min, $22\,00 \to 06\,00$ is $8$ h, $06\,00 \to 06\,14$ is $14$ min. Total: $8$ h $26$ min. **B1**
(The first diagram in "Understand it" shows this.)

**(b)** 6.14 am. **B1**

**(c)** $8 + \frac{26}{60} = 8.4333\ldots = 8.433$ hours. **B1**

**(d)** Speed $= 596 \div (8 + 26 \div 60) = 70.67\ldots$, so $70.7$ km/h. **M1** for dividing the distance by the time in hours, **A1**. Typing $8.26$ for $8$ h $26$ min would give $72.2$ km/h, which is wrong.

## Example 3

Pens cost $\$1.35$ each. Lena has $\$20$.

(a) Work out the largest number of pens Lena can buy and the change she receives. **[3]**

(b) Lena is paid $\$9.40$ per hour for the first $35$ hours she works in a week. For each extra hour she is paid $1\frac{1}{2}$ times this rate. One week she works $41.5$ hours. Calculate her pay for this week. **[3]**

**(a)** $20 \div 1.35 = 14.81\ldots$, so she can buy $14$ pens. **B1** (round down: $15$ pens would cost $\$20.25$).

Cost $= 14 \times 1.35 = \$18.90$. **M1** for $20 - 14 \times 1.35$.

Change $= 20 - 18.90 = \$1.10$. **A1**

**(b)** Normal pay: $35 \times 9.40 = \$329$. Overtime rate: $9.40 \times 1.5 = \$14.10$. **M1** for either.

Extra hours: $41.5 - 35 = 6.5$, paid $6.5 \times 14.10 = \$91.65$. **M1**

Total: $329 + 91.65 = \$420.65$. **A1**

## Example 4

(a) A jacket costs $86.50$ euros in Spain and £$74.99$ in the UK. The exchange rates are $1$ euro $= \$1.09$ and £$1 = \$1.27$. In which country is the jacket cheaper, and by how many dollars? Give your answer to the nearest cent. **[3]**

(b) Kai changes $\$500$ into pounds at £$1 = \$1.27$. Calculate how many pounds he receives. **[1]**

(c) A plane leaves Dubai at $22\,35$ on Monday, local time. The flight takes $13$ hours $50$ minutes. The local time in Auckland is $9$ hours ahead of the local time in Dubai. Find the day and the local time in Auckland when the plane lands. **[3]**

**(a)** Both currencies have the $1$, so multiply to get dollars. Spain: $86.50 \times 1.09 = \$94.285$. UK: $74.99 \times 1.27 = \$95.2373$. **M1** for either conversion.

Difference: $95.2373 - 94.285 = 0.9523$. **M1** for subtracting the dollar prices.

It is cheaper in Spain by $\$0.95$. **A1**

**(b)** Towards the currency with the $1$: divide. $500 \div 1.27 = 393.700\ldots$, so £$393.70$. **B1**

**(c)** In Dubai time: add the hours and minutes separately: $22$ h $35$ min $+13$ h $50$ min $= 35$ h $85$ min $= 36$ h $25$ min. That is $1$ day $12$ h $25$ min, so $12\,25$ on **Tuesday**. **M1** for adding the flight time.

Auckland is $9$ hours ahead: $12\,25 + 9$ h $= 21\,25$. **M1** for adding (not subtracting) the $9$ hours.

The plane lands on Tuesday at $21\,25$ Auckland time. **A1**

## Common mistakes

- **Treating an hour as 100 minutes.** $10\,03 - 09\,18$ is not $85$ minutes and $2.4$ hours is not $2$ h $40$ min. Count up in jumps to find durations, and multiply the decimal part of an hour by $60$. Examiners see this in almost every session.
- **Getting midnight wrong.** Across midnight, the hours pass $24$ and start again at $00$. Counting up from the earlier time handles this; subtracting the later time from the earlier one does not.
- **Mixing up the two clocks.** "18 55 pm", "6.15" with no am or pm, and three-digit times such as "6 55" all lose marks. Write 24-hour times with four digits and no am/pm.
- **Going the wrong way with a time zone.** "Ahead" means later, so add; "behind" means earlier, so subtract. Also remember to add the flight time, and give the day when asked.
- **Multiplying instead of dividing by the exchange rate** (or the other way round). Look for the $1$ in the rate, then sense-check whether the number should get bigger or smaller.
- **Rounding too early.** Rounding a denominator such as $8.2976\ldots$ to $8.3$, or a conversion to the nearest cent halfway through can move the final answer out of the accepted range. Keep the full display until the last step.
- **Wrong accuracy in the final answer.** "2 significant figures" for $5.997\ldots$ is $6.0$, not $6$ or $6.00$; money needs 2 decimal places, so $\$3.60$, not $\$3.6$.
- **Missing brackets on the calculator.** $21.4 + 35.9 \div 8.2976$ is not the same as $(21.4 + 35.9) \div 8.2976$. Bracket the whole top and bottom of a fraction.
- **Rounding the wrong way for "how many".** Items you can afford round **down**; coaches or boxes needed to hold everything round **up**.
- **Subtracting the wrong way for change.** Change is the money handed over **minus** the cost; in an algebra version, the whole cost needs brackets: $20 - (3x + 2y)$.

## How to get the marks

- **Show the calculation for each step**, such as $20 - 14 \times 1.35$. Many 2- and 3-mark questions give a method mark for the right calculation even if a slip spoils the answer, and a mark for a correct middle value (such as the total cost).
- **Write the full calculator value, then round.** "$5.9973\ldots = 6.0$" earns a mark for the unrounded value even if the rounding is wrong.
- **Follow the accuracy the question gives**: "to the nearest cent" or "to 2 decimal places" for money, "correct to 4 significant figures" for calculator questions, 3 significant figures if nothing is said. Exact answers (such as $\$400$ or $40$ hours) need no rounding.

- **Give times in the form asked for**: "in hours and minutes" means something like $5$ h $15$ min, not $5.25$ h; "using the 24-hour clock" means four digits such as $15\,45$; for a flight, the **day and** the time.
- **Answer the whole question.** "In which country and by how much?" needs both the country and the amount. "The number of cups and the change" needs both.
- **"Show that"** questions (for example "show that the saving is $450$ rupees, correct to the nearest $10$ rupees") need every conversion written out, and a final value more accurate than the one printed before you round to it.
- **Follow-through marks** are common: a wrong total hours used correctly to find the pay still earns the pay mark, so keep going.

## Quick check

1. Change $3.35$ hours into hours and minutes.
2. A film starts at $18\,40$ and lasts $2$ hours $35$ minutes. Write the time it ends using the 12-hour clock.
3. Tickets cost $\$4.65$ each. Work out the largest number of tickets you can buy with $\$30$, and the change.
4. The exchange rate is $\$1 = 7.24$ yuan. Change $1000$ yuan into dollars, to the nearest cent.
5. Calculate $\dfrac{12.6 + 3.8^2}{\sqrt{17.3}}$, giving your answer correct to 3 significant figures.

## Answers

1. $0.35 \times 60 = 21$ minutes, so 3 h 21 min.
2. $18\,40 + 2$ h $= 20\,40$, then $+35$ min $= 21\,15$, which is 9.15 pm.
3. $30 \div 4.65 = 6.45\ldots$, so 6 tickets (round down). They cost $6 \times 4.65 = \$27.90$, so the change is $30 - 27.90 = \$2.10$.
4. Going to the currency with the 1, so divide: $1000 \div 7.24 = 138.121\ldots$, which is $\$138.12$.
5. The top is $12.6 + 14.44 = 27.04$ and the bottom is $\sqrt{17.3} = 4.15933\ldots$, so the value is $6.5010\ldots = 6.50$ (3 s.f.; the final zero is needed).

## Past questions to try

- **0580/31/M/J/25 Q11**: a flight across time zones, with the day and local time of arrival.
- **0580/32/M/J/25 Q8**: comparing two amounts in different currencies, to 2 decimal places.
- **0580/33/M/J/23 Q2**: shopping costs, the most bottles you can buy from $\$20$ and the change, and best value.
- **0580/41/O/N/25 Q8**: a calculator question with powers and a root.