

CLOCK DETECTIVE 2

The Case of the Missing Minutes



Special Agent: Penelope

Minutes are going missing all over town — swallowed by the space between two clocks. Only a certified Clock Detective can count them back.

Detective Refresher

Case one taught you to read clocks. Prove it still sticks.

REMEMBER

Hour hand: **short** — the hour is the number it **passed last**. Minute hand: **long** — count by **5s** to where it points. You've done this before, Agent. Warm up those skills!

- 1 Write each time. One of these is an old trick from case one...


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- 2 The minute hand takes 5 minutes between numbers. How many minutes does it take to travel from the 12 to the 5? _____

Minutes on the Move

How long between two times? Count the sweep.

THE METHOD



The bakery timer started at **4:15** and rang at **4:40**. How long did it run?

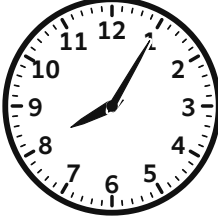
Watch the minute hand sweep (the striped slice): start at the 3 and **count by 5s** to the 8: **5, 10, 15, 20, 25**. The timer ran **25 minutes**.

Careful: 25 minutes is an **amount of time**, not a clock time — the answer is “25 minutes,” never “4:25”!

- 1** How many minutes passed between each pair of clocks? Count the minute hand's trip by 5s.

a.    minutes

start end

b.    minutes

start end

c.    minutes

start end

- 2** Bureau tally! Add up all the minutes you just recovered: _____ + _____ + _____ = _____ minutes back where they belong.

Crossing the Hour

The minutes hide when the hour flips. Count up in two hops.

THE METHOD



start



end

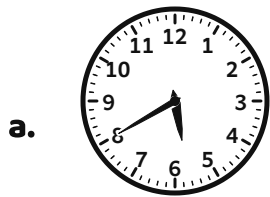
From **2:50** to **3:10** — the hour changed mid-count! Don't panic. Count UP in **two hops**, like climbing stairs with a landing:

Hop 1: from 2:50 up to **3 o'clock** = **10** minutes.

Hop 2: from 3:00 to 3:10 = **10** more.

Total: **10 + 10 = 20 minutes**. Same counting-up trick as making change at the Coin Bureau — with one difference, Agent: a dollar fills up at **100** cents, but an hour fills up at **60** minutes!

- 1** Count each one in two hops: up to the o'clock, then past it. Write hop 1 and hop 2 in the dashed boxes, then the total.



a.

start



end

to o'clock

+

past it

=

min



b.

start



end

to o'clock

+

past it

=

min



c.

start



end

to o'clock

+

past it

=

min



d.

start



end

no hop boxes this time, Agent — you've got this:

min

Hours First, Then Minutes

Long stretches need the biggest hops.

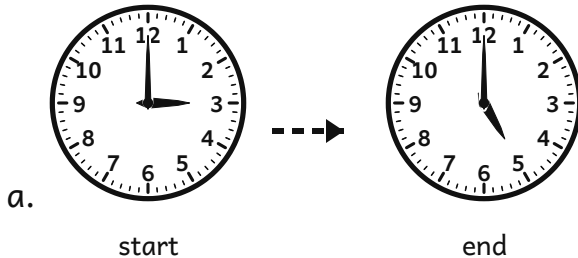
THE METHOD

From **1:20** to **3:45** — that's a long stretch. **Hop the HOURS first**, then walk the minutes:

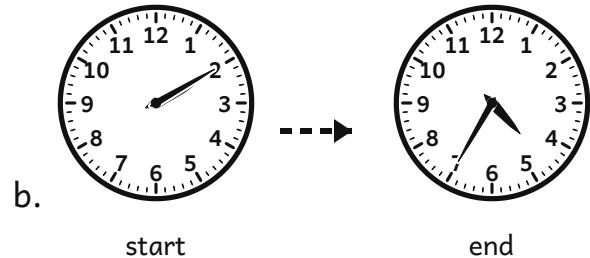
1:20 → 2:20 (1 hour) → 3:20 (2 hours) → then 3:20 to 3:45 is 25 minutes.

Answer: **2 hours 25 minutes**. Hours are just giant steps — the clock face looks the same after each one, only the hour hand has moved.

- 1** How long between each pair? Hop the hours, then the minutes.



h min



h min

- 2** No clocks this time, pure detective work: lunch starts at **12:30** and the skate session starts at **2:45**. How long is the wait? (Careful with the first hop: 12:30 → 1:30 is one hour!) _____ hours _____ minutes

- 3** Sam is muddling amounts and clock times again. Circle only the **AMOUNTS of time**:
25 minutes · 4:25 · 2 hours 15 minutes · 3:45



Detective note: an answer like “2 hours 15 minutes” is an **amount of time**. If your answer looks like a clock time (“2:15”), ask yourself which one the question wanted!

When Does It End?

Start time + minutes = the future. You can draw the future.

THE METHOD



start



end

Cartoon starts at **7:10** and lasts **30 minutes**.

When does it end?

Walk the minute hand forward by 5s, six steps:
15, 20, 25, 30, 35, 40 — it ends at **7:40**.

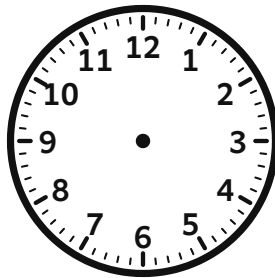
If the wait has **hours** in it, hop the hours first (just like Part 4!), then walk the minutes. And remember the sneaky hour hand: it creeps forward too!

- 1** Draw the hands on the blank clock to show when each one ends, then write the end time. (Short hour hand, long minute hand — and mind the hour hand's creep!)

a.



start



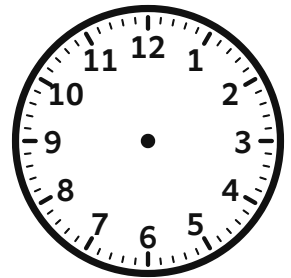
+ 45 minutes — draw it!

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b.



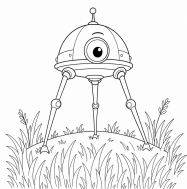
start



+ 45 minutes — draw it!

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- 2** The Martian's spaceship leaves at **7:35**. Boarding takes **20 minutes**. If he starts boarding right at 7:35, when is he done? _____



Morning or Night?

Every clock time happens *TWICE* a day.

LEARN

Here's a mystery from case one you're finally ready for: a day has **24 hours**, but the clock only shows 12! So the hour hand makes **two full trips** every day — and every time happens **twice**.

We tell the twins apart with two little codes: **AM** = the morning trip (midnight to noon). **PM** = the afternoon-and-night trip (noon to midnight).

The two special o'clocks have names: 12:00 in the day is **noon**; 12:00 at night is **midnight**.

1 Circle AM or PM for each. When does it usually happen?

AM · PM

eating breakfast

AM · PM

watching the sunset

AM · PM

brushing teeth before bed

AM · PM

the school bell rings to START school

AM · PM

eating dinner

AM · PM

waking up

2 The clock says 7:00. What might you be doing if it's 7:00 **AM**? And at 7:00 **PM**?

AM: _____ PM: _____

3 What do we call 12:00 in the middle of the day? _____ And 12:00 in the middle of the night? _____

The Daily Case File

One day in Maplewood. Solve it hour by hour.

7:00 AM	Penelope wakes up
7:45 AM	leave for school
8:30 AM	school starts · reading time until 9:15
4:15 PM	skate session begins — lasts 1 hour 30 minutes
7:00 PM	one chapter of the Martian book before bed

- How long is morning reading time (8:30 to 9:15)? Cross the hour in two hops!
_____ minutes
- The skate session starts at 4:15 PM and lasts 1 hour 30 minutes (hop the hour first!).
When does it end — and is that AM or PM? _____
- Between waking up (7:00) and leaving for school (7:45), is there enough time for a 60-minute TV episode? YES / NO (circle one) How many minutes ARE there?
_____ minutes
- Chapter time starts at 7:00 PM. The minute hand makes exactly **one full trip** while she reads (a full trip = 60 minutes = 1 whole hour). What time is it when she stops, AM or PM and all? _____
- Brain-stretcher: Saturday recess ends at **11:40 AM**, and lunch starts right then and lasts **30 minutes**. When does lunch end — AM or PM and all? Careful... something special happens at 12:00! _____

CASE CLOSED: Bureau audit complete — every missing minute in Maplewood is accounted for. Not one goes missing on your watch, Agent Penelope. (Again.)