Pip 11+ PRACTICE

FREE PRINTABLE + WORKED ANSWERS

Maths word problems

A worksheet that shows the working, not just the answer.

LEARN > TRY > CHECK

Twelve original multi-step problems

Money | Fractions | Time | Ratio | Area

Percentages | Scale | Averages

A4 print-ready | Clear working space | Full solutions

No email gate. Original Pip practice, not an official paper.

After the sheet, keep practising free in Pip.

Fresh 11+ Maths questions and feedback after each answer.

Download on the App Store

GET IT ON Google Play

START HERE

Turn words into a route

Use the same four moves on every problem. Draw a small model before reaching for a calculation.

1 Read
Underline what you need to find.

2 Model
Sketch a bar, timeline or table.

3 Solve
Do one operation at a time.

4 Check
Use units and a rough estimate.

WORKED EXAMPLE

A club has 36 badges. It gives one third away, then gives away 8 more. How many badges remain?

36 badges in all

12	12	12

one third goes first

---

36 ÷ 3 = 12

36 - 12 - 8 = 16

Answer: 16 badges remain

Check: 12 + 8 + 16 = 36

TIP

If a question says "of the remaining", calculate the new amount first. Do not take both fractions from the starting total.

PRACTICE 1 OF 4

Start with clear steps

Work one step at a time. Draw a bar, timeline or quick sketch if that makes the words easier to see.

01 Tickets and change

MONEY

At a science fair, adult tickets cost £8.40 and child tickets cost £5.60. A family buys 2 adult and 3 child tickets and pays with £40. How much change do they get?

Show your working

Answer: _____

02 The sticker bag

FRACTIONS

A bag holds 72 stickers. Three eighths are stars and one quarter are circles. All the others are triangles. How many triangle stickers are there?

Show your working

Answer: _____

03 The coach trip

TIME

A coach leaves at 09:35. Driving takes 1 hour 48 minutes, and a 15-minute stop adds to the journey. What time does the coach arrive?

Show your working

Answer: _____

PRACTICE 2 OF 4

Link two ideas

Work one step at a time. Draw a bar, timeline or quick sketch if that makes the words easier to see.

04 Oat bars for the team

PROPORTION

A recipe uses 180 g of oats for 12 bars. The team makes 30 bars from a 500 g bag. How many grams of oats are left in the bag?

Show your working

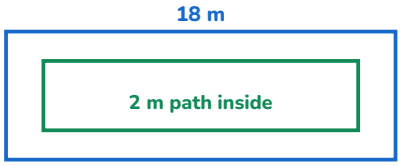
Answer: _____

05 A path round the garden

AREA

A rectangular garden is 18 m by 12 m. A path 2 m wide runs inside every edge. What area is left for planting?

Show your working



Answer: _____

06 Team badge colours

RATIO

Blue and red badges are in the ratio 3:5, with 64 badges altogether. Four blue badges are added and eight red badges are removed. What is the new blue:red ratio in its simplest form?

Show your working

Answer: _____

PRACTICE 3 OF 4

Choose the right model

Work one step at a time. Draw a bar, timeline or quick sketch if that makes the words easier to see.

07 The jacket sale

PERCENTAGES

A jacket costs £72. It is reduced by 25%, then £4 delivery is added. How much does the customer pay altogether?

Show your working

Answer: _____

08 The coastal route

FRACTIONS & DISTANCE

A 180 km coastal route is planned. A cyclist travels two fifths of it before lunch and another 54 km afterwards. How many kilometres remain?

Show your working

Answer: _____

09 Tiling the hall

AREA & ROUNDING

A hall floor is 4 m by 3 m. Each tile covers 0.25 m², and tiles are sold in packs of 10. What is the least number of full packs needed? Ignore cuts and waste.

Show your working

Answer: _____

PRACTICE 4 OF 4

Stretch and check

Work one step at a time. Draw a bar, timeline or quick sketch if that makes the words easier to see.

10 The cake stall

FRACTIONS OF A REMAINDER

A stall starts with 120 cakes. It sells two fifths in the morning, then one third of the remaining cakes in the afternoon. How many cakes are left?

Show your working

Answer: _____

11 Two walks on a map

SCALE

On a map, 1 cm represents 4 km. Two joined path sections measure 4.5 cm and 3.25 cm. What is the actual length of the whole route?

Show your working

Answer: _____

12 The missing quiz score

AVERAGES

The mean of five quiz scores is 18. Four scores are 15, 19, 16 and 21. What is the fifth score?

Show your working

Answer: _____

WORKED ANSWERS 1 OF 4

See every step

Mark the route, not just the final number. A wrong answer often reveals which step needs another try.

01 Tickets and change

£6.40

- 2 adult tickets: 2 x £8.40 = £16.80.
- 3 child tickets: 3 x £5.60 = £16.80.
- Total £33.60, so change is £40 - £33.60 = £6.40.

Check: £33.60 + £6.40 = £40.

02 The sticker bag

27 triangles

- Stars: 72 ÷ 8 x 3 = 27.
- Circles: 72 ÷ 4 = 18.
- Triangles: 72 - 27 - 18 = 27.

Check: 27 + 18 + 27 = 72.

03 The coach trip

11:38

- 09:35 + 1 hour = 10:35.
- 10:35 + 48 minutes = 11:23.
- 11:23 + 15-minute stop = 11:38.

Check: From 09:35 to 11:38 is 2 hours 3 minutes.

TRY THE TROUBLESOME STEP AGAIN

If an answer differs, circle the first step that changed. Check ticket totals, fraction parts or the added stop before redoing the rest.

WORKED ANSWERS 2 OF 4

See every step

Mark the route, not just the final number. A wrong answer often reveals which step needs another try.

04 Oat bars for the team

50 g

> Oats for one bar: 180 ÷ 12 = 15 g.
> Oats for 30 bars: 30 x 15 = 450 g.
> Oats left: 500 - 450 = 50 g.

Check: 450 g used + 50 g left = 500 g.

05 A path round the garden

112 m²

> Planting length: 18 - 2 - 2 = 14 m.
> Planting width: 12 - 2 - 2 = 8 m.
> Planting area: 14 x 8 = 112 m².

Check: The planting area is smaller than 18 x 12 = 216 m².

06 Team badge colours

7:8

> There are 3 + 5 = 8 parts, so one part is 64 ÷ 8 = 8.
> Blue 3 x 8 = 24; red 5 x 8 = 40.
> New counts are 28 blue and 32 red; divide both by 4.

Check: 28:32 simplifies to 7:8.

TRY THE TROUBLESOME STEP AGAIN

For an inner path, subtract its width from both ends of each dimension. For a changed ratio, update both colours before simplifying.

WORKED ANSWERS 3 OF 4

See every step

Mark the route, not just the final number. A wrong answer often reveals which step needs another try.

07 The jacket sale

£58

> 25% is one quarter, so the discount is £72 ÷ 4 = £18.
> Sale price: £72 - £18 = £54.
> Add delivery: £54 + £4 = £58.

Check: Three quarters of £72 is £54, before delivery.

08 The coastal route

54 km

> Before lunch: 180 ÷ 5 x 2 = 72 km.
> Travelled altogether: 72 + 54 = 126 km.
> Remaining: 180 - 126 = 54 km.

Check: 72 + 54 + 54 = 180 km.

09 Tiling the hall

5 packs

> Floor area: 4 x 3 = 12 m².
> Tiles needed: 12 ÷ 0.25 = 48.
> Four packs hold 40 tiles, so five packs are needed.

Check: Five packs give 50 tiles, enough for 48.

TRY THE TROUBLESOME STEP AGAIN

For tiles sold in packs, round the number of packs up. A final answer should use the unit the question asks for.

WORKED ANSWERS 4 OF 4

See every step

Mark the route, not just the final number. A wrong answer often reveals which step needs another try.

10 The cake stall

48 cakes

> Morning: 120 ÷ 5 x 2 = 48 sold.
> Remaining at lunchtime: 120 - 48 = 72.
> Afternoon: 72 ÷ 3 = 24 sold; 72 - 24 = 48 left.

Check: 48 morning + 24 afternoon + 48 left = 120.

11 Two walks on a map

31 km

> Total map length: 4.5 + 3.25 = 7.75 cm.
> Each centimetre represents 4 km.
> Actual distance: 7.75 x 4 = 31 km.

Check: About 8 cm at 4 km each is about 32 km.

12 The missing quiz score

19

> Total needed for mean 18: 5 x 18 = 90.
> Known scores total 15 + 19 + 16 + 21 = 71.
> Missing score: 90 - 71 = 19.

Check: 15 + 19 + 16 + 21 + 19 = 90; 90 ÷ 5 = 18.

Keep Maths practice going in Pip

Free questions and feedback. Pip Pro adds interactive lessons.

Download on the App Store

GET IT ON Google Play