

OPENMAIC

CAEC Mathematics Readiness

Sample chapter for adults returning to learning

ORIGINAL PRACTICE • 30 QUESTIONS • 30-DAY PATH

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How to use this chapter

A calm, evidence-led start

This sample is for adults returning to mathematics. Work in short sessions, show one step per line, and treat every error as information about the next skill to practise.

Complete questions without a calculator when the page says No calculator. On calculator-permitted work, estimate first, enter second, and compare the display with your estimate.

A practice result is a readiness signal, not a prediction of an official score. Confirm registration, eligibility, fees, calculator rules, dates, accommodations and credential acceptance with your jurisdiction.

CHECKPOINT

- Set a 20-minute session.
- Keep paper, pencil and permitted calculator nearby.
- Record the error category, not the word “careless”.

Current mathematics structure

Verified from official public sources on 2 August 2026

The published structure is 42 questions in 120 minutes. Part I contains 12 questions in 30 minutes without a calculator and carries 25% of the mathematics weighting. Part II contains 30 questions in 90 minutes with a permitted calculator and carries 75%.

The official minimum standard is 55% in each subject. Mathematics is machine scored. A subject may normally be attempted once in a calendar month and no more than three times in a calendar year.

The credential is available in English and French, but fees, eligibility, centres, dates and institutional acceptance vary by jurisdiction.

CHECKPOINT

- Part I: fluency and accurate written steps.
- Part II: interpretation plus deliberate calculator use.
- Never import another province's rule into your plan.

The four-part problem routine

Reduce working-memory load before calculating

Write four labels: asked quantity, relevant information, relationship, and required unit. This small model separates reading from calculation.

Estimate the sign and rough size. Then calculate. Finish with a labelled sentence that answers the quantity requested.

If the wording is dense, circle the question sentence, underline quantities with units, cross out irrelevant details, and sketch a diagram or table.

CHECKPOINT

- Asked: what must the final number represent?
- Relationship: which operation, rate, formula or equation connects the quantities?
- Check: does the magnitude and unit make sense?

Fractions

Make the parts the same size before adding

For $\frac{3}{4} + \frac{2}{3}$, use twelfths: $\frac{9}{12} + \frac{8}{12} = \frac{17}{12} = 1 \frac{5}{12}$. Adding denominators would combine different-sized parts as if they were identical.

For multiplication, multiply numerators and denominators, then simplify. For division, multiply by the reciprocal of the divisor.

Estimate with familiar benchmarks: $\frac{3}{4}$ is near 0.75 and $\frac{2}{3}$ is near 0.67, so the sum should be a little above 1.4.

CHECKPOINT

- No calculator
- Explain what the denominator means.
- Simplify only after the relationship is correct.

Decimals, integers and powers

Protect place value and operation order

Align decimal points for addition and subtraction. Estimate the whole-number size before placing the decimal in multiplication or division.

For signed numbers, separate direction from size. Starting at -8 and warming by 15 gives $-8 + 15 = 7$.

Mark parentheses and powers first. Then multiply or divide from left to right, followed by addition or subtraction from left to right.

CHECKPOINT

- Half of 2.4 is 1.2 , not 0.12 .
- Write negative signs clearly.
- One logical step per line is an error-control system.

Percent and ratio

Name the base quantity

A 25% discount on \$48 is \$12, but the sale price is $\$48 - \$12 = \$36$. The requested quantity decides whether the intermediate value is the final answer.

For 2 L covering 18 m^2 , the unit rate is $9 \text{ m}^2/\text{L}$. At the same rate, 5 L covers 45 m^2 .

Useful mental anchors are 50% = one half, 25% = one quarter, 10%, 5%, and 1%.

CHECKPOINT

- Base: the quantity the percent is taken from.
- Rate: amount per one unit.
- Carry money and measurement units into the answer.

Linear equations

Preserve balance and check by substitution

A \$12 fixed fee plus 18% of job value x totals \$48: $12 + 0.18x = 48$. Subtract 12 from both sides, then divide by 0.18. The job value is \$200.

Substitute: $12 + 0.18(200) = 48$. A successful substitution confirms that the value satisfies the model.

Label the unknown before building the equation. The total bill and the job value are different quantities.

CHECKPOINT

- Define x with a unit.
- Translate before pressing calculator keys.
- Substitute the answer into the original relationship.

Geometry and measurement

Draw, label, choose, calculate, check

A right triangle with perpendicular sides 9 cm and 12 cm has $c^2 = 9^2 + 12^2 = 225$, so $c = 15$ cm.

A 10 m by 6 m floor has area 60 m^2 . Remove a 3 m by 2 m opening to obtain 54 m^2 of usable area.

Length uses linear units, area uses squared units, and volume uses cubed units. Convert all dimensions to compatible units before calculating.

CHECKPOINT

- Sketch even when no diagram is supplied.
- Choose a formula for the requested measure.
- Check that the longest side and unit are sensible.

Data and probability

Read the representation before computing

For 12, 15, 15, 18 and 40, the mean is 20, while the median and mode are 15. The outlier pulls the mean upward.

Read graph titles, axes, units and scales before individual values. An upward scatter pattern suggests positive association; it does not establish causation.

Without replacement, probabilities change after the first selection. Three red and five blue tokens give $\frac{3}{8} \times \frac{2}{7} = \frac{3}{28}$ for two reds.

CHECKPOINT

- State the event before choosing the denominator.
- Compare mean, median and mode when outliers exist.
- Association and causation are different claims.

Calculator discipline

Estimate, enter, read, compare

A calculator performs arithmetic; it does not identify the quantity, relationship or unit. Write the intended expression before entry.

Clear old entries, use parentheses when required, and read every digit. Compare the sign and order of magnitude with your estimate.

Official guidance restricts graphing and symbolic-manipulation capabilities. Confirm the current rule and exact model with your testing authority.

CHECKPOINT

- Estimate first.
- Enter in visible chunks.
- Write the unit after checking the display.

Common error patterns

Turn a miss into one repair action

Useful categories are: misunderstood the request; chose the wrong relationship; arithmetic error; sign or decimal error; calculator-entry error; rounded too early; lost the unit; or ran out of time.

Attach one repair: underline the question sentence, write an estimate, show one operation per line, use parentheses, or complete five prerequisite items.

Maths anxiety can narrow working memory. Slow the first ten seconds, identify the requested quantity, and write the first safe step.

CHECKPOINT

- Avoid the label “careless”.
- Separate concept errors from arithmetic errors.
- Return to the prerequisite skill when needed.

Practice set A

No calculator — Questions 1–6

1. Compute $5/6 + 3/4$.
2. Evaluate $-12 + 4 \times 5$.
3. Find 15% of 80.
4. Solve $x + 4.5 - 1.2 = 10$.
5. Evaluate $(18 \div 3)^2 - 5$.
6. Half of 2.4 litres is how many litres?

Show enough working that you can identify the source of an error. Do not compress several operations into one jump.

CHECKPOINT

- Target: accurate first steps.
- Suggested time: 15 minutes.
- Answers appear later; do not turn the page yet.

Practice set B

Calculator permitted — Questions 7–12

7. A \$48 item is 25% off. Find the sale price.
8. Two litres cover 18 m². How many m² will 5 L cover?
9. A 210 km trip takes 3.5 hours. Find the average speed.
10. Find the circumference of a circle with radius 4 cm using $\pi \approx 3.1416$.
11. Find the hypotenuse of a right triangle with legs 9 cm and 12 cm.
12. A 10 m by 6 m floor contains a 3 m by 2 m opening. Find usable area.

Estimate before entering each expression. Label every final answer.

CHECKPOINT

- Suggested time: 22 minutes.
- Keep units visible.
- Check magnitude after calculator entry.

Practice set C

Calculator permitted — Questions 13–18

13. Find the volume of a $1.2 \text{ m} \times 0.5 \text{ m} \times 0.4 \text{ m}$ box.
14. Convert 2.75 m to centimetres.
15. Find the mean of 12, 15, 15, 18 and 40.
16. A bag has 3 red and 5 blue tokens. Two are selected without replacement. Find $P(\text{two red})$.
17. Starts were 120, 150, 135 and 180. Find the greatest month-to-month increase.
18. A \$12 fixed fee plus 18% of x totals \$48. Find x .

Write the relationship or formula before using the calculator.

CHECKPOINT

- Suggested time: 24 minutes.
- State probability events.
- Distinguish total from component quantities.

Practice set D

Mixed application — Questions 19–24

19. Find the area of a 22.5 m by 37.5 m rectangle.
20. Describe the association in a scatterplot that rises from lower left to upper right.
21. Thirty percent of 120 seats are reserved. How many are unreserved?
22. A delivery fee is \$8 plus 12% of an order and totals \$32. Find the order value.
23. A task takes $\frac{5}{6}$ hour and another takes $\frac{3}{4}$ hour. Find total time.
24. A 2.5 m by 1.8 m wall has a 0.9 m by 1.2 m window. Find paintable area.

For each word problem, label asked quantity, information, relationship and unit.

CHECKPOINT

- Suggested time: 25 minutes.
- Interpret before calculating.
- Use a sentence for the final answer.

Practice set E

Transfer — Questions 25–30

25. A pay rate rises from \$20 to \$23 per hour. Find the percentage increase.
26. A rectangular tank is $80\text{ cm} \times 50\text{ cm} \times 40\text{ cm}$. Find volume in cubic centimetres.
27. Find the median of 8, 11, 11, 14, 22 and 30.
28. Solve $0.35x + 7 = 42$.
29. A scale drawing uses 1 cm for 2.5 m. What actual length is represented by 7.2 cm?
30. A fair six-sided die is rolled twice. Find $P(\text{two sixes})$.

These original transfer items are not official questions and are not calibrated to predict an official result.

CHECKPOINT

- Suggested time: 25 minutes.
- Choose the model explicitly.
- Record confidence beside each answer.

Answer key A

Questions 1–6 with concise reasoning

1. $19/12 = 1 \frac{7}{12}$. Use twelfths: $10/12 + 9/12$.
2. 8. Multiply first: $4 \times 5 = 20$; then $-12 + 20$.
3. 12. Ten percent is 8 and five percent is 4.
4. 6.7. Combine $4.5 - 1.2 = 3.3$; subtract from 10.
5. 31. Parentheses give 6, then $36 - 5$.
6. 1.2 L. Half means divide by 2.

If an answer differs, identify the first line where your process changed.

CHECKPOINT

- Do not score only the final number.
- Notice sign, place-value and order errors.
- Choose one repair action.

Answer key B

Questions 7–12 with concise reasoning

7. \$36. The \$12 discount is intermediate.
8. 45 m^2 . Unit rate is $9 \text{ m}^2/\text{L}$.
9. 60 km/h . Divide distance by time.
10. 25.13 cm to two decimals. Use $C = 2\pi r$.
11. 15 cm . Use the Pythagorean theorem.
12. 54 m^2 . Subtract 6 m^2 opening from 60 m^2 floor.

Check that each answer uses the quantity and unit requested.

CHECKPOINT

- Estimate before accepting a display.
- Square and linear units are not interchangeable.
- Keep intermediate values labelled.

Answer key C

Questions 13–18 with concise reasoning

13. 0.24 m^3 . Multiply the three dimensions.

14. 275 cm. Multiply metres by 100.

15. 20. The total is 100 divided by 5.

16. $\frac{3}{28}$. Compute $\frac{3}{8} \times \frac{2}{7}$ and simplify.

17. 45. Changes are +30, –15 and +45.

18. \$200. Solve $0.18x = 36$.

Probability denominators and units change only when the model says they should.

CHECKPOINT

- Name the event.
- Read a sequence as changes, not only totals.
- Substitute equation answers.

Answer key D

Questions 19–24 with concise reasoning

19. 843.75 m^2 .

20. Positive association; this alone does not establish causation.

21. 84 seats. Reserved is 36, so unreserved is $120 - 36$.

22. \$200. Solve $8 + 0.12x = 32$.

23. $1 \frac{7}{12}$ hours. Use twelfths.

24. 3.42 m^2 . Wall area 4.50 minus window area 1.08.

A correct intermediate value is not enough when the question asks for the remainder.

CHECKPOINT

- Answer the requested quantity.
- Use squared units for area.
- Explain the association conservatively.

Answer key E

Questions 25–30 with concise reasoning

25. 15%. Increase is \$3; divide by original \$20.

26. 160,000 cm³.

27. 12.5. Average the middle values 11 and 14.

28. 100. Subtract 7 and divide by 0.35.

29. 18 m. Multiply 7.2 by 2.5.

30. 1/36. Independent rolls: $1/6 \times 1/6$.

Compare each miss with its confidence rating. High-confidence errors may reveal a misconception; low-confidence correct answers may need retrieval practice.

CHECKPOINT

- Percentage change uses the original as base.
- Even-count median averages two middle values.
- Independent events multiply.

Build a 30-day plan

Short sessions with spaced mixed review

Days 1–5: fractions, signed numbers, decimals and operation order. Days 6–10: percent, ratio and rates.

Days 11–15: equations and word-problem translation.

Days 16–20: measurement, area, volume, similarity and right triangles. Days 21–24: graphs, statistics and probability. Days 25–27: mixed sets. Days 28–30: weakest skills, official sample environment and local rule confirmation.

Protect one strength while rebuilding three priorities. Repeat the diagnostic only after enough practice that a changed process is plausible.

CHECKPOINT

- Aim for 20–35 focused minutes.
- Record accuracy, time, confidence and error category.
- Schedule the next session before finishing today.

Readiness review

Interpret evidence without issuing yourself a pass or fail

Foundation Rebuild means several prerequisite skills need calm, structured practice. Developing means some routines are present but inconsistent. Approaching Readiness means the core process is usually sound with identifiable gaps. Strong Readiness means this pilot set was handled consistently.

These labels are study directions, not official classifications. One or two items cannot measure a whole domain reliably.

Use three strengths, three priorities and the next scheduled action. Confirm the credential route with the institution that will use it.

CHECKPOINT

- Look for accurate first steps.
- Review slow correct answers as well as misses.
- Do not infer an official score from this sample.

Official confirmation checklist

Complete before registration or launch

Confirm that CAEC is offered in your jurisdiction and that you meet current eligibility rules. Confirm test centre, dates, fees, rewrite rules, calculator model and accommodations.

Confirm that the intended employer, college, apprenticeship or training provider accepts the credential for your goal.

For current structure and outcomes, use the official CAEC Testing Service and your jurisdiction's official service page. Public information can change.

CHECKPOINT

- Jurisdiction checked: _____
- Calculator model checked: _____
- Institutional acceptance checked: _____

Glossary and final note

A compact reference for your next session

Base: the quantity a percentage is taken from. Unit rate: amount per one unit. Variable: a symbol representing an unknown or changing quantity. Outlier: a value unusually far from others. Association: a pattern in paired data that does not by itself show causation.

Perimeter measures boundary length. Area measures a surface in square units. Volume measures space in cubic units. Mean is total divided by count; median is the middle ordered value; mode is the most frequent value.

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CHECKPOINT

- Original instructional examples only.
- No official question bank reproduced.
- No pass, credential, employment or income guarantee.