

HAST Year 9 Entry Practice Paper 1

Mathematical Reasoning

35 questions · 4 options each (A–D) · 40 minutes · No calculator

How to use this booklet

- There are 35 questions in this section. For each question there are four possible answers, A, B, C and D. Choose the one correct answer.
- This section tests mathematical reasoning: problem solving with number, algebra, measurement, space and data. Use rough paper for working.
- Calculators are not allowed. You have 40 minutes. You will not lose marks for wrong answers, so attempt every question.

MATHEMATICAL REASONING — 35 QUESTIONS

Multiple choice · 40 minutes

Work through the questions in order. If a question stalls you, move on and come back. Then check your work against the worked solutions.

1. What is $12.4 - 5.5$?

- A 6.9
- B 69
- C 7
- D 0.69

2. Estimate 686×51 by rounding each number to its leading digit (first digit).

- A 350,000
- B 750
- C 35,000
- D 3,500

3. A taxi company charges a flat fee of \$4 plus \$2 for each mile traveled. A passenger paid \$28. How many miles did the passenger travel?

- A 12
- B 16
- C 14
- D 24

4. Write $2\frac{4}{7}$ as an improper fraction.

- A $\frac{15}{7}$
- B $\frac{18}{7}$
- C $\frac{18}{2}$
- D $\frac{6}{7}$

5. What is $\frac{2}{3} - \frac{1}{5}$? Give the answer in simplest form.

- A $\frac{7}{15}$
- B $\frac{8}{15}$
- C $\frac{3}{8}$
- D $\frac{2}{15}$

6. What is 15% of 120?

- A 102
- B 18
- C 1,800
- D 8

7. A prize of \$21 is divided between two people in the ratio 3 : 4. What is the larger share, in dollars?

- A 9
- B 10
- C 12
- D 3

8. A right triangle has a hypotenuse of 25 inches and one leg of 7 inches. How long is the other leg, in inches?

- A 18
- B 32
- C 25
- D 24

9. What is the measure of ONE exterior angle of a regular polygon with 10 sides, in degrees?

- A 144
- B 36
- C 18
- D 41

MATHEMATICAL REASONING — 35 QUESTIONS

Answers & worked solutions

Answer Key

1	A	2	C	3	A	4	B	5	A	6	B
7	C	8	D	9	B	10	C	11	A	12	C
13	B	14	D	15	B	16	C	17	B	18	A
19	A	20	D	21	C	22	B	23	A	24	A
25	B	26	D	27	C	28	C	29	D	30	B
31	D	32	D	33	A	34	D	35	C		

1. What is $12.4 - 5.5$? [Decimals]

Correct answer: A — 6.9

- Line up the decimal points (for + and -).
- Calculate carefully: 6.9.
- Why the other options are wrong:
- B (69): Check the decimal places.
- C (7): This value does not result from a valid step in the working above, which reaches 6.9. It usually comes from using the wrong formula, the wrong quantity or a unit that was not converted. The correct method starts: Line up the decimal points (for + and -).
- D (0.69): Check the decimal places.

LOS: Mathematics: decimals

KEY TAKEAWAY

Decimals: line up the points to add or subtract; count decimal places when multiplying.

2. Estimate 686×51 by rounding each number to its leading digit (first digit). [Estimation]

Correct answer: C — 35,000

- Round 686 to 700 and 51 to 50.
- $700 \times 50 = 35000$.
- Why the other options are wrong:
- A (350,000): This is the correct answer (35,000) multiplied by 10: a scaling factor was applied (or a factor missed) that the working above does not use.
- B (750): Multiply, don't add.
- D (3,500): This is the correct answer (35,000) divided by 10: a scaling factor was applied (or a factor missed) that the working above does not use.

LOS: Mathematics: estimation