

BOARD OF STUDIES
NEW SOUTH WALES

2002 SCHOOL CERTIFICATE TEST

12 November

Start 9.25 am

MATHEMATICS

**SAMPLE
QUESTIONS
& FORMULAE
BOOKLET**

General instructions

- Reading time – 5 minutes
- Working time – 2 hours
- Write using black or blue pen
- The supervisor will tell you when to begin the test
- Attempt ALL questions
- This test has TWO sections
- There will be a short break between Section 1 and Section 2
- Calculators may be used in Section 2 only
- The Sample Questions and Formulae Booklet may be used in both sections
- Write your Centre Number and Student Number at the top of page 1 (Section 1) and page 33 (Section 2 Part B)

Instructions for answering questions

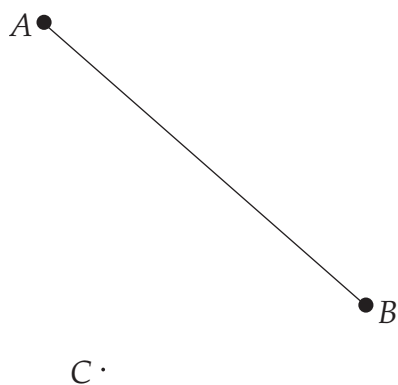
- Complete your answers in either black or blue pen.
- ALL answers to questions in Section 1 and Section 2 Part B must be written in the spaces provided in the Section 1 and Section 2 Part B Question and Answer booklets.
- **Completing the diagram**

You may wish to use a pencil in questions where you are to complete a diagram.

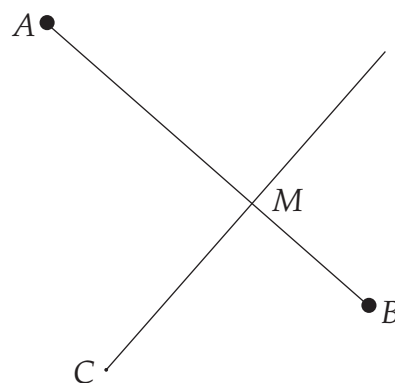
Sample 1:

Draw a line through C , perpendicular to AB .

Label the point of intersection of the two lines, M .



The question has been answered below.



Line CM is drawn perpendicular to AB using a set square or pair of compasses and ruler.

- **Multiple choice**

Complete your answers to the multiple-choice questions (in Section 2 Part A) on the answer sheet provided. Select the alternative A, B, C or D that best answers the question. Fill in the response oval completely.

Sample 2: $2 + 4 =$ (A) 2 (B) 6 (C) 8 (D) 9
 A B C D

If you think you have made a mistake, put a cross through the incorrect answer and fill in the new answer.

A B C D

If you change your mind and have crossed out what you consider to be the correct answer, then indicate the correct answer by writing the word **correct** and drawing an arrow as follows.

A B C D
 correct
 ↙

- **Multiple-choice questions that may have more than one correct answer**

Complete your answers to the multiple-choice questions that may have more than one correct answer in the Section 2 Part B Question and Answer Booklet.

Sample 3: $\frac{2}{3} =$ (A) $\frac{2-1}{3-1}$ (B) $\frac{2+1}{3+1}$ (C) $\frac{2 \times 1}{3 \times 1}$ (D) $\frac{2 \div 1}{3 \div 1}$
 A B C D

Two oval shapes have been filled in to show the two correct answers.

If you think you have made a mistake, put a cross through the incorrect answer and fill in the new answer, as shown in Sample 2.

If you change your mind and have crossed out what you consider to be the correct answer, then indicate the correct answer by writing the word **correct** and drawing an arrow, as shown in Sample 2.

FORMULAE

For use in SECTION 1 and SECTION 2

Circumference of a circle = $\pi \times$ diameter

$$[C = \pi d]$$

Area of a circle = $\pi \times$ radius squared

$$[A = \pi r^2]$$

Area of a parallelogram = base \times perpendicular height

$$[A = bh]$$

Area of a rhombus = half the product of the diagonals

$$\left[A = \frac{1}{2}xy \right]$$

Area of a trapezium = half the sum of the parallel sides \times perpendicular height

$$\left[A = \left(\frac{a+b}{2} \right) h \right]$$

Volume of a prism = area of cross-section \times height

$$[V = Ah]$$

Volume of a cylinder = $\pi \times$ radius squared \times height

$$[V = \pi r^2 h]$$

Pythagoras' theorem states:

In a right-angled triangle,

the hypotenuse squared = the sum of the squares of the other two sides

$$[c^2 = a^2 + b^2]$$