

BOARD OF STUDIES  
NEW SOUTH WALES

**2000  
SCHOOL  
CERTIFICATE  
TEST**

**7 November**

**MATHEMATICS**

**SECTION 2**

**Part B**

**25 marks**

**CENTRE NUMBER**

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**STUDENT NUMBER**

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**Directions for Section 2 Part B**

- 1 Allow about 30 minutes to answer this part
- 2 Part B Questions 76–84
- 3 Calculators may be used in Section 2
- 4 Write your answers to Questions 76–84 in this booklet
- 5 Complete your answers in either blue or black pen
- 6 Write your Centre Number and Student Number at the top of this page

Questions 76 to 80 are worth 1 mark each. Each question MAY have MORE THAN ONE correct answer. Fill in the response oval(s) completely.

**Question 76**

To evaluate  $\frac{(26+75) \times 13}{2}$  with a calculator, we could press buttons in the order

- (A)  $26 + 75 \times 13 \div 2 =$
- (B)  $26 + 75 \div 2 \times 13 =$
- (C)  $26 + 75 = \times 13 \div 2 =$
- (D)  $26 + 75 = \div 2 \times 13 =$

(A)                       (B)                       (C)                       (D)

**Question 77**

'Half of a number is decreased by 5 and the result is 15.'

If the number is  $x$ , this statement could be written as

- (A)  $\frac{1}{2}x - 5 = 15.$
- (B)  $\frac{1}{2x} - 5 = 15.$
- (C)  $\frac{x}{2} - 5 = 15.$
- (D)  $\frac{1}{2}(x - 5) = 15.$

(A)                       (B)                       (C)                       (D)

**Question 78**

Paulene is shorter than Mona. Ruth is taller than Stamo.

In order of increasing height, they could be

- (A) Ruth, Mona, Stamo, Paulene.
- (B) Stamo, Paulene, Ruth, Mona.
- (C) Paulene, Stamo, Mona, Ruth.
- (D) Stamo, Ruth, Paulene, Mona.

(A)                       (B)                       (C)                       (D)

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**Question 79**

All edges of a rectangular prism are measured in whole centimetres.

One edge is 10 cm long.

The volume of the prism is  $60 \text{ cm}^3$ .

What could be the area of a cross-section of the prism?

- (A)  $10 \text{ cm}^2$                       (B)  $24 \text{ cm}^2$                       (C)  $30 \text{ cm}^2$                       (D)  $36 \text{ cm}^2$

(A)                       (B)                       (C)                       (D)

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**Question 80**

A bag contains 64 marbles of different colours.

It is known that there are exactly 32 red marbles and exactly 12 yellow marbles.

A person draws out one marble from the bag.

Which of the following statements could possibly be true?

- (A) The probability of choosing a blue marble is 1.
- (B) The probability of choosing a blue marble is  $\frac{20}{64}$ .
- (C) The probability of choosing a blue marble equals the probability of choosing a red marble.
- (D) The probability of choosing a blue marble equals the probability of choosing a yellow marble.

(A)                       (B)                       (C)                       (D)

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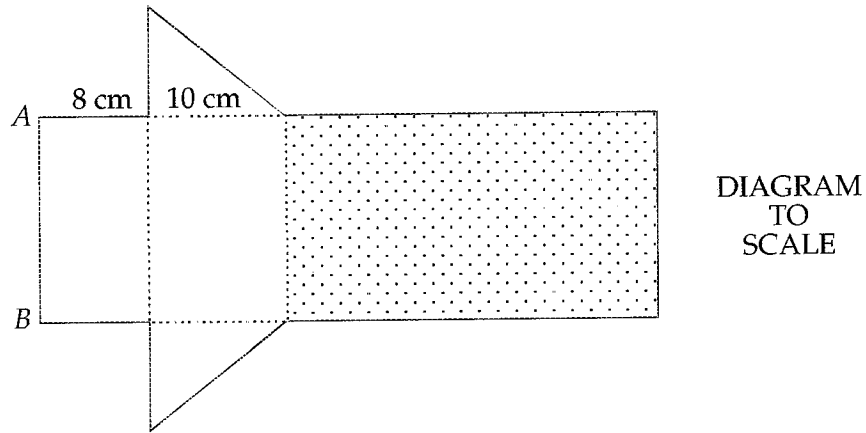
**End of questions in Section 2 Part B that may require you to fill in more than one correct answer.**

**Please turn over**

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**Question 81** (5 marks)

The shaded section of this diagram is to be cut to complete the net of a solid.



(a) Mark accurately where the shaded section must be cut.

(b) Name the solid that can be formed.

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(c) By measurement and calculation, find the length of side  $AB$ .

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(d) When assembled, the net folds into a drink container.  
 David has 12 litres of juice.

How many of these containers can he fill? (1 litre = 1000 cm<sup>3</sup>)

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Question 82 (5 marks)

MILLENNIUM MOVIE STUDIOS

<b>Tour Prices</b>	
Adults	\$39
Children (Under 13 years)	\$28
Students (Ages 13–18 years)	\$33
Pensioners	\$27
Family ticket (2 adults, 2 children)	\$115

- (a) (i) Two adults and two children (ages 6 and 10) buy a family ticket.

How much do they save on the normal price?

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- (ii) Calculate this saving as a percentage of the normal price. Write your answer to one decimal place.

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- (b) A school is given a quote of \$795 for a group of 30 Year 10 students to visit the studios.

How much will each student save on the normal price?

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- (c) Two people visit the studios and pay \$61 for their tickets.

What could their ages be?

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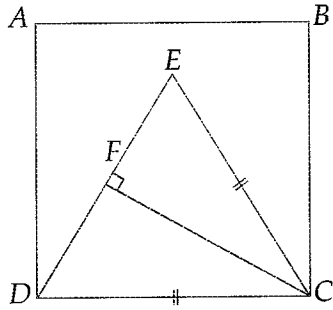
- (d) When the Goods and Services Tax (GST) is added, tour prices increase by 10%.

What is the new price for a pensioner?

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Question 84 (5 marks)



NOT TO SCALE

$ABCD$  is a square.

$\triangle DEC$  is an equilateral triangle.

Side  $EC = 6$  cm.

$CF \perp DE$ .

$F$  is the midpoint of  $DE$ .

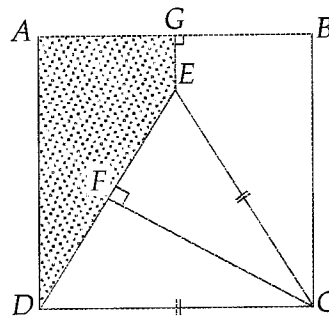
- (a) Calculate the area of the square  $ABCD$ .

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- (b) Use Pythagoras' theorem to show that  $FC = 5.2$  (to 1 decimal place).

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- (c) The line  $GE$  is added to the diagram so that  $GE \perp AB$ .



NOT TO SCALE

- (i) Find the length of  $GE$ .

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- (ii) Calculate the shaded area.

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End of test