

BOARD OF STUDIES
NEW SOUTH WALES

**1998
SCHOOL
CERTIFICATE
EXTERNAL
TEST**

17 November
Start 9.25 am

MATHEMATICS

SECTION 1

**QUESTION
BOOKLET**

General Test Instructions

- Preparation time: 5 minutes
- Working time: 2 hours
- The supervisor will tell you when to begin the test
- 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 & Formulae Booklet may be used in BOTH Section 1 and Section 2

Directions for Section 1

- 1 You have 30 minutes to answer Section 1
- 2 Section 1: Questions 1–25 (25 marks)
- 3 Attempt ALL questions in Section 1
- 4 Calculators are NOT to be used in Section 1
- 5 The Sample Questions & Formulae Booklet may be used in Section 1
- 6 Complete your answers to Section 1 on the separate Answer Sheet

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1. Find the value of $3000 \div 50$.

2. Write 25.6174 correct to 2 decimal places.

3. Write $4 - \frac{1}{3}$ as a mixed number.

- 4.

6	1	
	5	3
2		4

This magic square uses each of the numbers 1, 2, 3, 4, 5, 6, 7, 8, 9 once. In a magic square, each row, column and diagonal has the same sum.

Complete the magic square on the separate Answer Sheet, by filling in the missing numbers.

5. Find 3.5% of 400.

6. Write two numbers that have a sum of 19 and a product of 48.

7.

<i>Player</i>	<i>Score</i>
Mila	-9
Greg	-3
Jackie	+7
Mark	-5
Tim	+1

Which two players' scores differ by 2?

(A) Mila and Jackie

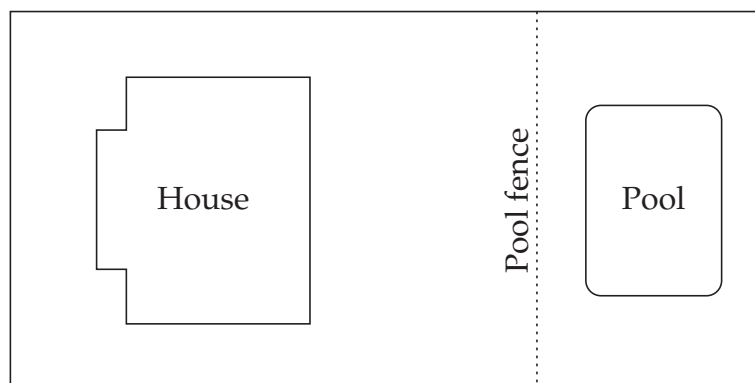
(B) Greg and Mark

(C) Greg and Tim

(D) Jackie and Mark

8. Increase 170 by 10%.

9.



Brian built a pool fence in his backyard.
The plan shown uses a scale of 1 : 400.

What is the shortest distance, in metres, from Brian's house to the pool fence?

10. Write a whole number whose square root is between 5 and 6.

11. Complete the conversion of $\frac{52}{20}$ to a mixed number.

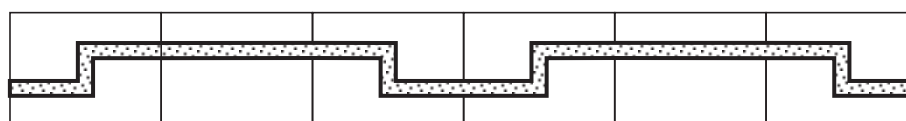
12. Estimate the value of $\frac{71}{4.1+1.8}$ giving your answer as a whole number.

13. The fraction $\frac{\Delta}{5}$ has a value between 6 and 7.

Give one possible whole number for Δ .

14. What is the cost of 15 calculators at \$8.80 each?

- 15.



The first six tiles of a border pattern are shown.

Erica continues the pattern and notes the design on the 16th, 25th, 35th and 46th tiles.

Which of the noted tiles is different from the other three?

- (A) 16th (B) 25th (C) 35th (D) 46th

16. A bag contains 36 coloured discs.
Ernie chooses a disc at random from the bag.
He records its colour and returns it to the bag.
He does this twelve times.

RESULTS	
<i>Colour</i>	<i>Number drawn</i>
Red	6
Black	4
Yellow	2

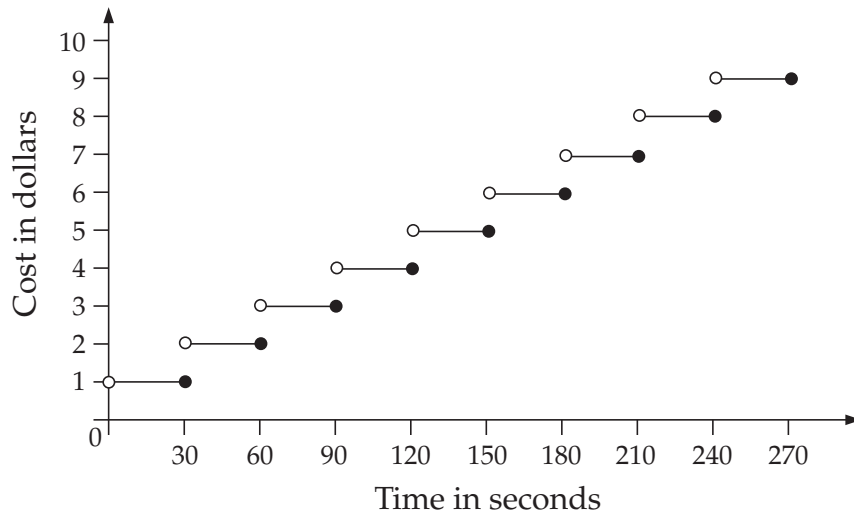
From his results in the table, what is the best estimate of the number of yellow discs in the bag?

17. The colour *Pine Green* can be made by mixing green paint and white paint in the ratio 5 : 3.

How much white paint is used to make 4 litres of *Pine Green*?

- (A) 1.2 L (B) 1.5 L (C) 2.4 L (D) 2.5 L

18. The step graph shows the cost of telephone calls lasting different lengths of time.



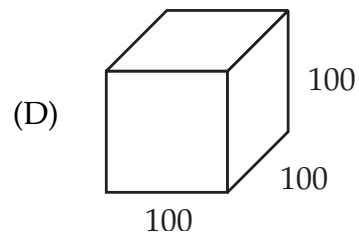
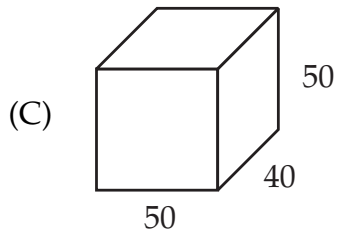
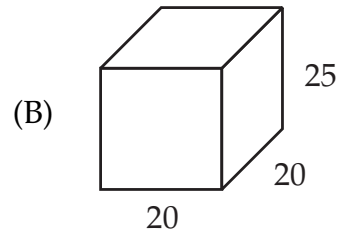
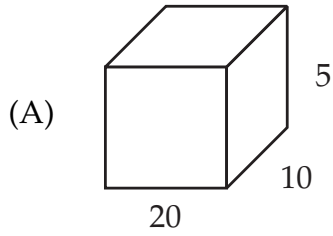
Julie makes two telephone calls, one lasting 1 minute 32 seconds and the other lasting 1 minute 5 seconds.

What is the total cost of these two telephone calls?

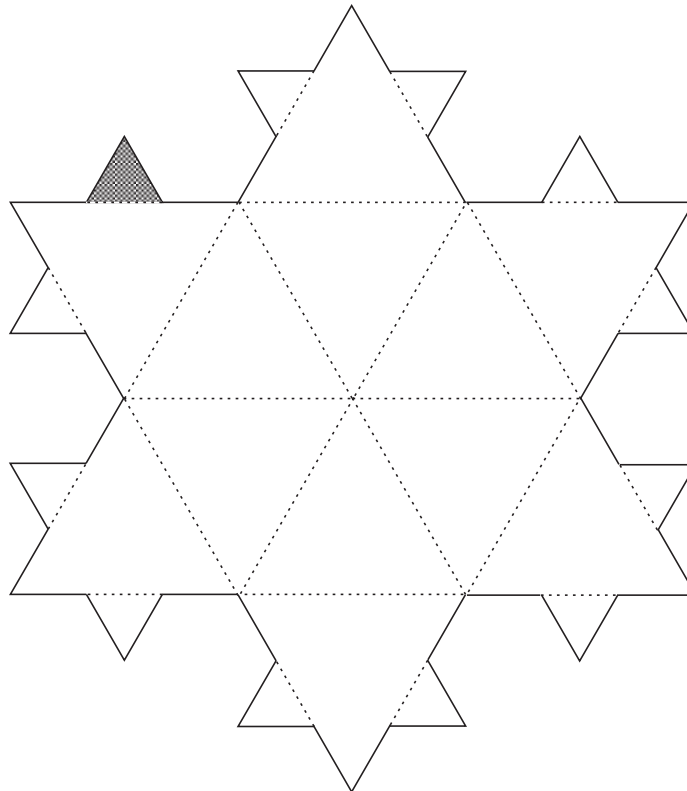
- (A) \$6 (B) \$7 (C) \$8 (D) \$9

19. The measurements shown for these containers are in centimetres.
The diagrams are not drawn to scale.

Which container has a capacity of one litre?



- 20.



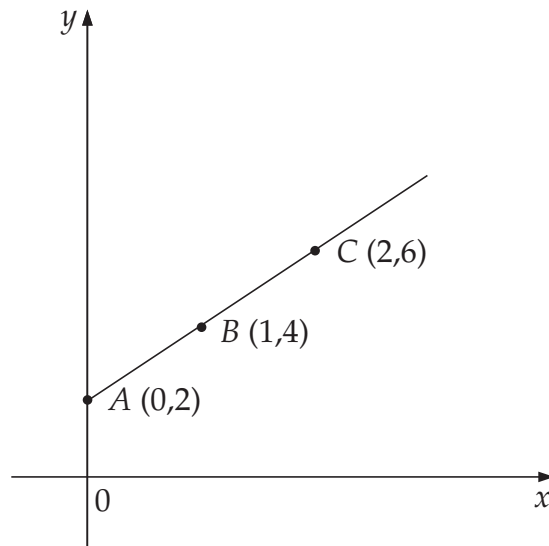
Each triangle in the snowflake is equilateral.
The 48 sides on the perimeter are each 1 centimetre in length.

What fraction of the snowflake is represented by the shaded triangle?

21.

x	0	1	2
y	2	4	6

Zina uses the table to produce the straight line below.



The point $D(7, n)$ also lies on this line.

Find the value of n .

22. Harold organised a Sunday bushwalk in 1998 with three friends.

- Kim could not go during the first 6 months.
- Phil could not go during school holidays.
- Anna worked on the first 3 Sundays of each month.
- They all agreed that winter months (June, July, August) were unsuitable for the walk.

KEY

 School holidays

1998																													
JANUARY							FEBRUARY							MARCH															
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	☆	*	*	*	◆	*									
				1	2	3	1	2	3	4	5	6	7	1	2	3	4	5	6	7									
4	5	6	7	8	9	10	8	9	10	11	12	13	14	8	9	10	11	12	13	14									
11	12	13	14	15	16	17	15	16	17	18	19	20	21	15	16	17	18	19	20	21									
18	19	20	21	22	23	24	22	23	24	25	26	27	28	22	23	24	25	26	27	28									
25	26	27	28	29	30	31								29	30	31													
APRIL							MAY							JUNE															
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S									
				1	2	3	4						1	2		1	2	3	4	5	6								
5	6	7	8	9	10	11	3	4	5	6	7	8	9	7	8	9	10	11	12	13									
12	13	14	15	16	17	18	10	11	12	13	14	15	16	14	15	16	17	18	19	20									
19	20	21	22	23	24	25	17	18	19	20	21	22	23	21	22	23	24	25	26	27									
26	27	28	29	30			24	25	26	27	28	29	30	28	29	30													
							31																						
JULY							AUGUST							SEPTEMBER															
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S									
				1	2	3	4						1			1	2	3	4	5									
5	6	7	8	9	10	11	2	3	4	5	6	7	8	6	7	8	9	10	11	12									
12	13	14	15	16	17	18	9	10	11	12	13	14	15	13	14	15	16	17	18	19									
19	20	21	22	23	24	25	16	17	18	19	20	21	22	20	21	22	23	24	25	26									
26	27	28	29	30	31		23	24	25	26	27	28	29	27	28	29	30												
							30	31																					
OCTOBER							NOVEMBER							DECEMBER															
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S									
				1	2	3	1	2	3	4	5	6	7			1	2	3	4	5									
4	5	6	7	8	9	10	8	9	10	11	12	13	14	6	7	8	9	10	11	12									
11	12	13	14	15	16	17	15	16	17	18	19	20	21	13	14	15	16	17	18	19									
18	19	20	21	22	23	24	22	23	24	25	26	27	28	20	21	22	23	24	25	26									
25	26	27	28	29	30	31	29	30						27	28	29	30	31											

Use numerals to complete the earliest date that they could all have gone for the bushwalk.

Each of Questions 23, 24 and 25 may have MORE THAN ONE correct answer. On the separate Answer Sheet fill in EVERY correct answer for each of these questions.

23. Which of the following will simplify to 120?

(A) $\frac{30}{\frac{1}{4}}$

(B) $1000 \div 120\,000$

(C) 60×20

(D) $2.4 \div 0.02$

24. Which of the following will simplify to 3?

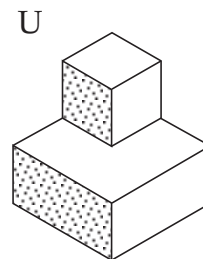
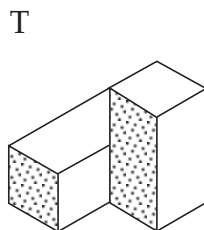
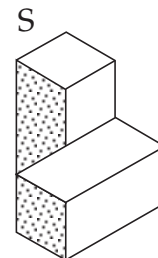
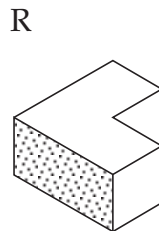
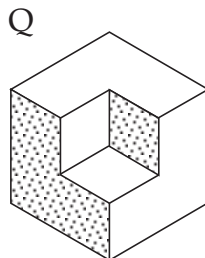
(A) $\sqrt{5^2 - 4^2}$

(B) $(1.5)^2$

(C) $27 - 4 \times 6$

(D) $24 \div 4 \times 2$

25. Which shapes will fit together to form a cube?



(A) Q and U

(B) R and S

(C) R and U

(D) S and T

End of questions in Section 1 that may require you to fill in more than one correct answer.

End of Section 1

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