



HIGHER SCHOOL CERTIFICATE EXAMINATION

1997

**MATHEMATICS IN  
PRACTICE**

2 UNIT

*Time allowed—Two hours and a half  
(Plus 5 minutes reading time)*

**DIRECTIONS TO CANDIDATES**

- Only Board-approved calculators are to be used.
- The mark out of 80 will be converted to a mark out of 100.

**Section I** (30 marks)

- This Section contains 30 multiple-choice questions.
- Attempt ALL questions.
- All questions are of equal value.
- Mark your answers in pencil on the Answer Sheet provided.
- Allow about one hour for Section I.

**Section II** (50 marks)

- Attempt ALL questions.
- All questions are of equal value.
- Answer the questions in the spaces provided in this paper.
- Write your Student Number and Centre Number in the spaces provided on the first page of each question.
- Show all necessary working.
- Marks may be deducted for careless or badly arranged work.
- Allow about one hour and a half for Section II.

## SECTION I

Attempt ALL questions.

All questions are of equal value.

Select the alternative A, B, C, or D that best answers the question.

Mark your answers in pencil on the *separate* Answer Sheet provided.

1. Below is a table of room rates per night for the Pioneer Motor Inn.

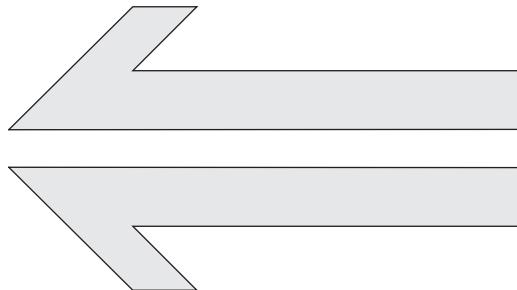
<i>Room only</i>	
1 adult	\$45
2 adults	\$51
Extra person	\$9
Child under 12	\$6

The Stewart family consists of two adults and two children aged 14 and 10 years. They stay one night at the Pioneer Motor Inn.

What is the cost of their room?

- (A) \$63                      (B) \$66                      (C) \$102                      (D) \$105
- 

- 2.



The shaded area can be divided into

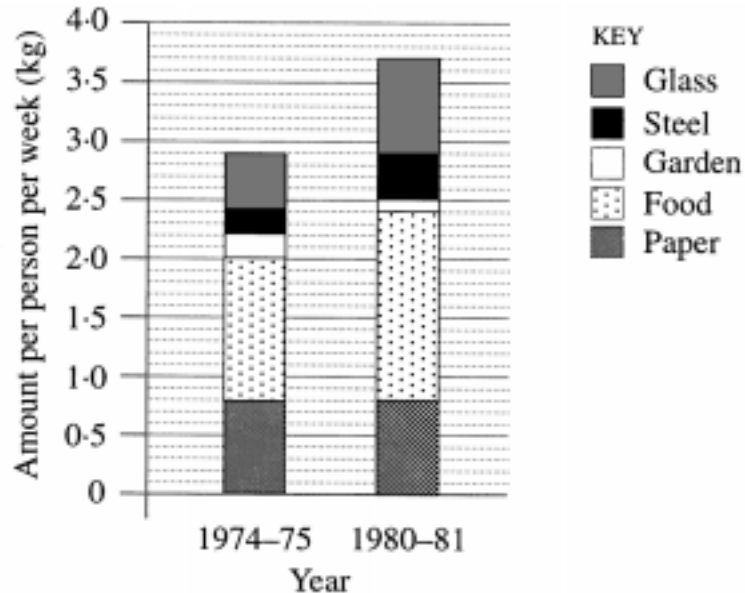
- (A) 2 rectangles and 2 trapeziums.  
 (B) 2 parallelograms and 2 rectangles.  
 (C) 2 triangles and 2 trapeziums.  
 (D) 2 trapeziums and 2 parallelograms.
-

3. Last year Jo spent \$16 430 in the ratio 5 : 2 : 3 on furniture, clothes, and rent respectively.

How much did she spend on rent?

- (A) \$3286                      (B) \$4929                      (C) \$7041                      (D) \$8215

4. The graph below shows the composition of household waste.



What was the amount of food in household waste in 1980–81 (in kilograms per person per week)?

- (A) 1.2                      (B) 1.3                      (C) 1.6                      (D) 2.4

5. The table below gives annual life-insurance premiums for male and female non-smokers.

ANNUAL PREMIUMS		
Age	Male non-smoker \$150 000 cover	Female non-smoker \$150 000 cover
30	\$161.15	\$128.15
35	\$169.40	\$144.65
40	\$194.15	\$161.15

Annie is 30 and she is a smoker. To receive the same life insurance cover as a 30-year-old female non-smoker, she must pay an *extra* 45 per cent on that premium.

How much will Annie pay?

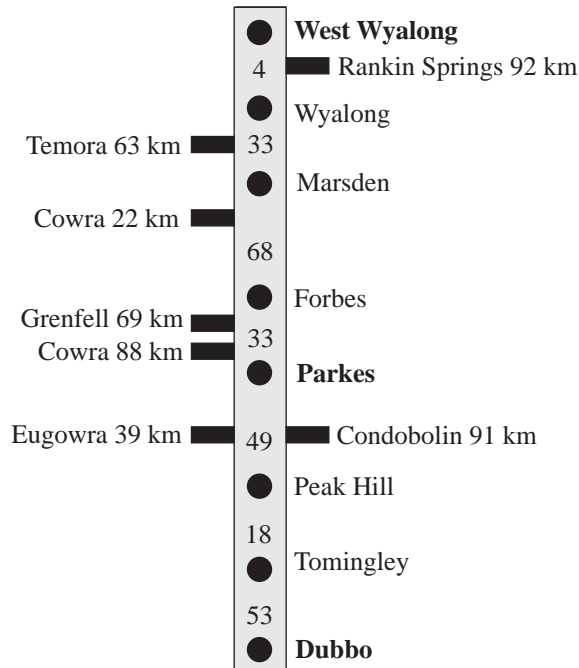
- (A) \$173.15                      (B) \$185.82                      (C) \$233.67                      (D) \$284.78

6. When Vicki bought a \$450 jacket, she had to pay only \$300.

The percentage *discount* is closest to

- (A) 33.3%                      (B) 50%                      (C) 66.7%                      (D) 150%

7. The following is a trip diagram for the route from Dubbo to West Wyalong.

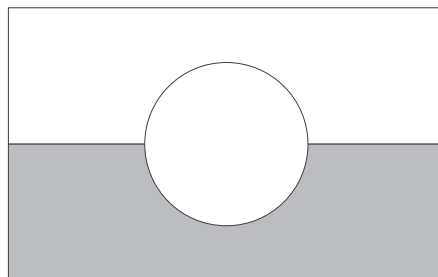


Boris and Martina are on a camping holiday in NSW. They travel from Parkes to West Wyalong. On the way they visit Temora.

How many kilometres do they travel on this trip?

- (A) 138 km                      (B) 201 km                      (C) 264 km                      (D) 297 km

- 8.



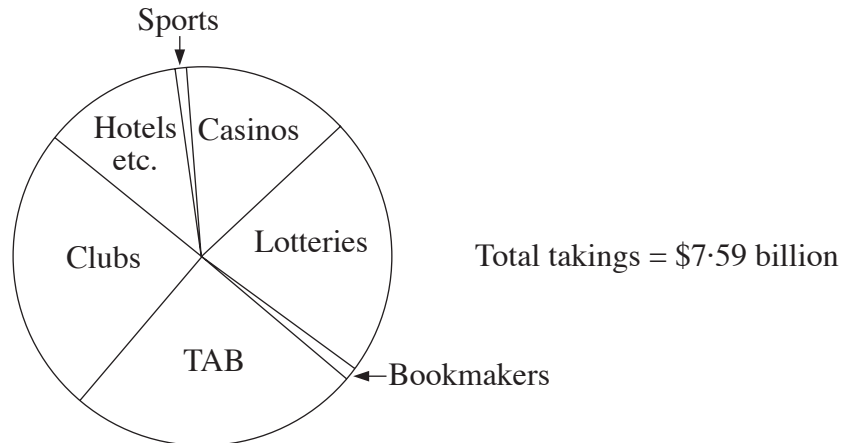
The area of the circle in this flag covers  $\frac{1}{5}$  of the total area of the flag. The other two areas are equal.

The fraction of the total area that is shaded is

- (A)  $\frac{1}{3}$                       (B)  $\frac{2}{5}$                       (C)  $\frac{1}{2}$                       (D)  $\frac{4}{5}$

USE THE FOLLOWING PIE GRAPH TO ANSWER QUESTIONS 9 AND 10.

BREAKDOWN OF TAKINGS FROM GAMBLING (NSW IN 1996)



SMH 6/2/97

Note that a billion is a thousand million.

9. Bookmakers' takings represent 0.6% of the total. How much is this?

- (A) \$4.554 million (B) \$45.54 million (C) \$455.4 million (D) \$4.554 billion

10. What fraction of the *total* amount is contributed by clubs?

- (A)  $\frac{1}{7}$  (B)  $\frac{1}{6}$  (C)  $\frac{1}{5}$  (D)  $\frac{1}{4}$

11. The following bill is part of an account for water-related services.

<i>Last bill</i>	<i>Credits</i>	<i>Balance</i>	<i>This bill</i>	<i>Total amount due</i>
\$140.30	\$140.30	\$0.00	\$138.44	\$138.44
Account for residential property: 7 Clay Street, Claytown				
Charges	1 Jan. 97 – 31 Mar. 97			\$
Water service				20.00
Sewerage service				67.90
Usage charge	10 Oct. 96 – 9 Jan. 97			
Water	<input type="text"/> kilolitres at 76.0 cents per kilolitre			<input type="text"/>
Total amount due				\$138.44

Calculate the number of kilolitres of water used.

- (A) 0.7 (B) 1.8 (C) 50.54 (D) 66.5

**12.** Julia needs to purchase 80 litres of paint for the exterior of her weatherboard house.

At the local hardware shop she can purchase:

- ten-litre cans of paint at \$70 per can;

*OR*

- four-litre cans of paint at \$45 per can.

How much does Julia *save* by purchasing the ten-litre cans of paint, rather than the four-litre cans of paint?

- (A) \$25                      (B) \$200                      (C) \$340                      (D) \$520
- 

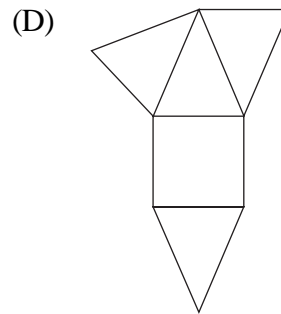
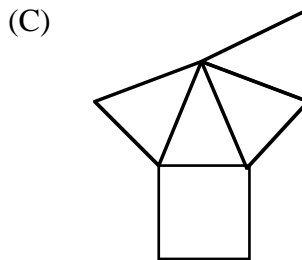
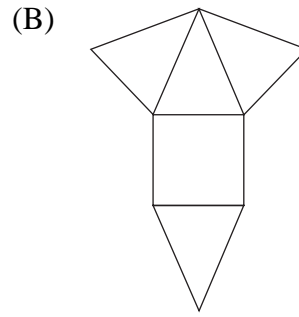
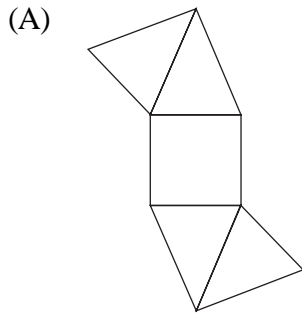
**13.** The timetable below is for the train from Moss Vale to Sydney.

<i>Town</i>	<i>Time</i>
Moss Vale	3:01
Burradoo	3:06
Bowral	3:09
Mittagong	3:13
Yerrinbool	3:26
Bargo	3:37
Tahmoor	3:44
Picton	3:52
Douglas Park	4:01
Menangle	4:08
Macarthur	4:16
Campbelltown	arrive 4:19
	depart 4:21
Glenfield	4:32
Sydney terminal	5:09

Use this timetable to find the time taken for the train to travel from Bargo to Campbelltown.

- (A) 42 minutes                      (B) 44 minutes  
(C) 1 hour 18 minutes                      (D) 1 hour 22 minutes
-

14. Which of the following nets *cannot* be folded to make a square pyramid?



15. The table shows the results of a survey of the top ten sports watched on TV by teenagers.

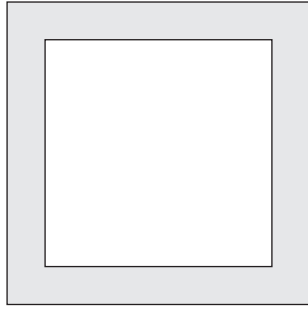
<i>Sport</i>	<i>Percentage who watch these sports</i>	<i>Sport</i>	<i>Percentage who watch these sports</i>
Basketball	50%	Aussie rules	27%
Cricket	38%	Swimming	27%
Rugby league	35%	Soccer	26%
Tennis	32%	Surfing	25%
Motor racing	28%	Baseball	19%

The number of teenagers surveyed who watch cricket is 770 412.

How many teenagers were surveyed altogether?

- (A) 292 757      (B) 477 655      (C) 1 063 169      (D) 2 027 400

16.



By measuring and calculating, find which of the following is closest to the area of the shaded section.

- (A)  $7 \text{ cm}^2$   
 (B)  $8 \text{ cm}^2$   
 (C)  $9 \text{ cm}^2$   
 (D)  $16 \text{ cm}^2$

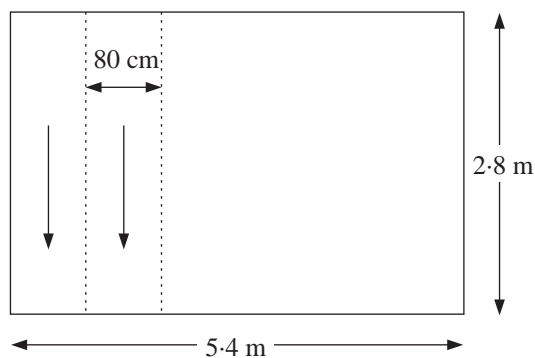
17. Below are the populations of four countries in 1991 and their predicted populations for the year 2000.

	1991	2000
Argentina	32.5 million	36.2 million
Australia	17.3 million	18.9 million
Malaysia	18.0 million	22.0 million
Morocco	26.6 million	31.6 million

Which country is expected to have the greatest percentage increase?

- (A) Argentina      (B) Australia      (C) Malaysia      (D) Morocco

18. Jason wishes to wallpaper his lounge room wall. The wallpaper is to be hung in vertical strips, as shown for the first two strips.



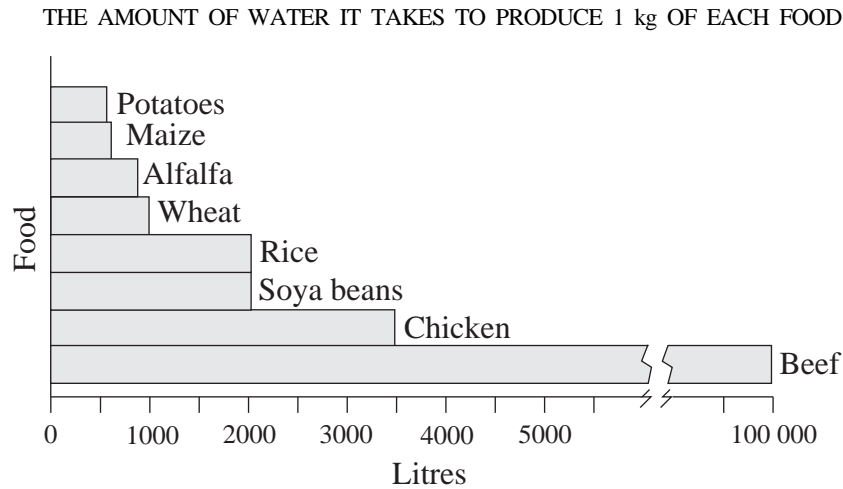
The wallpaper is 80 centimetres wide.

How much wallpaper will Jason need for the wall shown?

- (A) 15.12 m      (B) 16.8 m      (C) 18.9 m      (D) 19.6 m



USE THE GRAPH BELOW TO ANSWER QUESTIONS 19 AND 20.



19. By how many times (approximately) is the amount of water needed to produce 1 kg of beef greater than that needed for 1 kg of chicken?

(A) 2                      (B) 3.5                      (C) 29                      (D) 35

20. A hamburger uses 100 g of beef. What is the volume of the container needed to hold the water to produce the beef for this hamburger? (1 m<sup>3</sup> holds 1000 L.)

(A) 0.01 m<sup>3</sup>              (B) 0.1 m<sup>3</sup>              (C) 1 m<sup>3</sup>              (D) 10 m<sup>3</sup>

21. The following table gives the kilojoule content of 1 kg of four foods, and the amount of water needed to produce 1 kg of these foods.

<i>Food</i>	<i>Amount of water to produce 1 kg</i>	<i>Kilojoules in 1 kg</i>
Wheat	1000 L	14 750
Soya beans	2000 L	3 920
Rice	2000 L	14 670
Potatoes	600 L	2 700

Use the formula below to calculate which of these four foods requires the *least* amount of water to produce each kilojoule.

$$\text{Amount of water (in litres) to produce each kilojoule} = \frac{\text{Amount of water to produce 1 kg}}{\text{Number of kilojoules in 1 kg}}$$

(A) Wheat              (B) Soya beans              (C) Rice              (D) Potatoes

22. Attila and Honey wish to buy a block of land and are considering two options.

<i>Carray Estate</i>	<i>Sanjan Village</i>
Blocks of land	Blocks of land
16 m $\times$ 45 m	18 m $\times$ 45 m
\$70 000 each	\$76 950 each

What is the difference between the two options in cost per square metre of land?

- (A) \$2.22                      (B) \$77.22                      (C) \$100                      (D) \$4500

23. When it is 12:00 noon in Sydney it is 10:00 a.m. in Hong Kong on the same day. A plane takes 9 hours 40 minutes to travel from Sydney to Hong Kong.

The plane leaves Sydney at 4:50 p.m. on Saturday.





It will arrive in Hong Kong at

- (A) 11:30 p.m. Saturday.                      (B) 12:30 a.m. Sunday.  
(C) 2:30 a.m. Sunday.                      (D) 4:30 p.m. Sunday.

24. A frieze pattern is to be made using repetitions of the tile shown.



Which of the following patterns *cannot* be made?

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

- 25.** Edward takes out a loan of \$14 000 to buy a second-hand car. He makes fortnightly repayments of \$176 for four years.

How much interest will he pay?

- (A) \$2896                      (B) \$4304                      (C) \$4576                      (D) \$18 304
- 

- 26.** Peak Charles has latitude  $33^{\circ}\text{S}$  and longitude  $121^{\circ}\text{E}$ . Mount Cecelia has latitude  $24^{\circ}\text{S}$  and longitude  $121^{\circ}\text{E}$ .

Which statement is correct?

- (A) Peak Charles is south of Mount Cecelia.  
(B) Peak Charles is north of Mount Cecelia.  
(C) Peak Charles is east of Mount Cecelia.  
(D) Peak Charles is west of Mount Cecelia.
- 

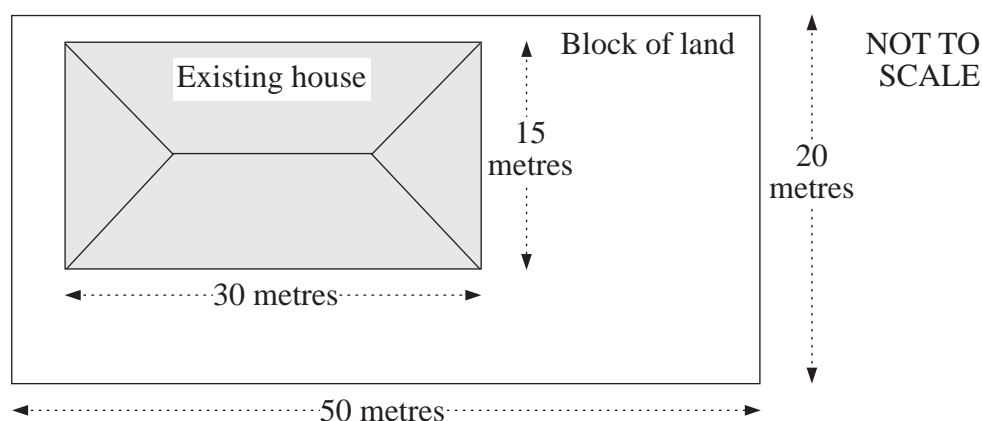
- 27.** Debbie is going to a conference in New Zealand. The costs for the conference are:

- registration NZ\$330;
- accommodation NZ\$42 per night for 5 nights;
- airfare NZ\$550.

What is the total cost in Australian dollars (to the nearest dollar)? (The exchange rate is  $\text{A\$1} = \text{NZ\$1.11.}$ )

- (A) \$831                      (B) \$982                      (C) \$1090                      (D) \$1210
-

28. The plan of an existing house on a block of land is shown below.



The owner of this block of land wishes to build a garage at the rear of the property. Council regulations state that the total area of buildings must not be more than 65% of the area of the land.

The greatest area that can be occupied by the garage is

- (A)  $200 \text{ m}^2$  (B)  $357.5 \text{ m}^2$   
 (C)  $550 \text{ m}^2$  (D)  $650 \text{ m}^2$
- 
29. A house was purchased at the beginning of 1995 for \$154 000. The house increased in value each year according to the yearly rate of inflation shown in the table.

<i>Year</i>	<i>Rate of inflation</i>
1995	2.0%
1996	2.5%

The value of the house at the end of 1996 to the nearest dollar is

- (A) \$157 850 (B) \$160 930 (C) \$161 007 (D) \$231 000
- 
30. A car travelling at 100 km/h travels 500 metres in
- (A) 5 seconds. (B) 12 seconds. (C) 18 seconds. (D) 36 seconds.
-

**EXAMINER'S USE ONLY****STUDENT NUMBER**

Q. 31

**1997  
HIGHER SCHOOL CERTIFICATE EXAMINATION  
MATHEMATICS IN PRACTICE  
2 UNIT**

**CENTRE NUMBER**


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## SECTION II

Attempt ALL questions.

All questions are of equal value.

Answer the questions in the spaces provided.

Show all necessary working.

Write your Student Number and Centre Number in the spaces provided  
on the first page of each question.

### QUESTION 31. The Consumer

- (a) A new Comet car is initially priced at \$36 000. In a sale, this price is discounted by 12%. A *further* 10% discount on the sale price is given for payment by cash.

Garry pays cash for a new Comet car during the sale. How much does he pay?

.....  
.....

- (b) The mathematics staff supplied lunch for Year 12. They bought:

- 10 two-litre bottles of orange juice at \$2.90 per bottle;
- 8 dozen apples at \$2.80 per dozen;
- 12 pizzas at \$12.50 each.

- (i) What was the total cost of the items bought?

.....  
.....

- (ii) There were nine teachers on the mathematics staff. They shared the cost equally.

How much did each teacher pay?

.....

## QUESTION 31. (Continued)

(c) A credit card statement is shown below.

FIFTH AVENUE CREDIT CARD STATEMENT			Ms Barbara Power
Opening balance	New charges	Payments/refunds	Closing balance
\$1751.96	+ \$892.58	– \$1751.96	\$892.58
<i>Date</i>	<i>Reference number</i>	<i>Transaction details</i>	<i>Amount (\$)</i>
21 Oct.	7561033214DW	Brown Bros 330	426.80
25 Oct.	7561487324AD	Brown Bros 330	178.60
08 Nov.	F506000460GDUTY	Government duties	.....
10 Nov.	8561234567AB	JM Bookworld	56.45
12 Nov.	856101452XYZ	Brewer Chiropractic	146.00
16 Nov.	7561111246PQ	Brown Bros 330	83.65
Credit limit:	\$2000	Minimum amount due: \$25.00	
Available credit:	\$1107	Payment due date: 3 Dec. 1996	892.58
There are no interest charges if the full amount is paid before the due date.			
Interest is charged at a rate of 15.6% per annum for each day after the due date on the amount owing.			

(i) Complete the above table by finding the value of the government duties.

.....  
 .....

(ii) By what date should the account have been paid?

.....

(iii) Barbara paid the full amount of the closing balance on 6 December.

How much interest was she charged?

.....  
 .....  
 .....

(iv) On 17 November 1996, Barbara attempted to use her credit card to buy a lounge suite for \$1500.

Explain why the transaction was not approved by the Fifth Avenue credit card company.

.....  
 .....  
 .....

## QUESTION 31. (Continued)

- (d) The table below gives weekly contribution rates for private health cover in 1997.

	WEEKLY CONTRIBUTION RATES	
	<i>Family</i>	<i>Singles</i>
Top private hospital cover	\$26.50	\$13.25
Private hospital cover	\$25.00	\$12.50
Public hospital, private room	\$20.80	\$10.40
Ancillary cover	\$15.90	\$7.95

- (i) The Jain family takes up the top private hospital cover and the ancillary cover.

How much do they pay for this private health insurance for the full year of 1997?

.....

.....

- (ii) The family also pays the Medicare levy of 1.5% of taxable income.

If the family's taxable income is \$68 000, what is the total amount paid for health cover (private health insurance and Medicare) for 1997?

.....

.....

.....

- (iii) From 1 July 1997, the government gave a rebate. The weekly contribution rates for a family dropped to \$19.77 for top private hospital cover, and \$13.98 for ancillary cover.

What is the total amount the Jain family saves over the remaining 26 weeks of 1997?

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STUDENT NUMBER

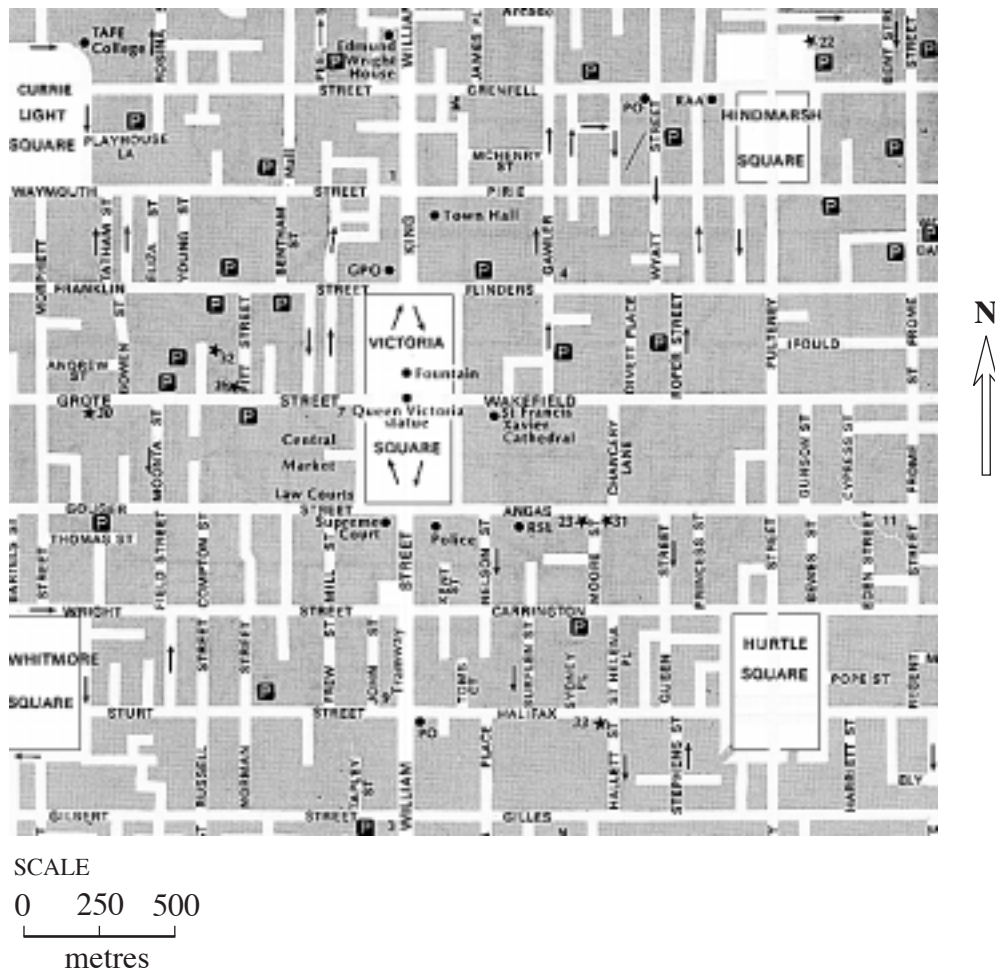
Q. 32

**1997  
HIGHER SCHOOL CERTIFICATE EXAMINATION  
MATHEMATICS IN PRACTICE  
2 UNIT—SECTION II**

CENTRE NUMBER

**QUESTION 32. Travel**

- (a) Below is part of a map of Adelaide.



Reproduced with permission from Reader's Digest (Australia)  
from the book, *Motoring Guide to Australia*.

- (i) In which direction is Whitmore Square from Victoria Square?
- .....
- (ii) How far is it from the southernmost side of Hindmarsh Square to the northernmost side of Hurtle Square (to the nearest 100 m)?
- .....

**Question 32 continues on page 18**

## QUESTION 32. (Continued)

(b) Below is the Countrylink timetable for the north coast.

COUNTRYLINK TRAINS AND CONNECTING COACH SERVICES <i>Sydney to Grafton—Casino—Murwillumbah—Surfers Paradise and Brisbane</i>						
Service type	XPT	Coach	Coach	XPT	Coach	Coach
Operates	Daily	Daily	Daily	Daily	Daily	Daily
Provider	Countrylink	Sunstate	Sunstate	Countrylink	Sunstate	Sunstate
	a.m.	p.m.	p.m.	p.m.	a.m.	a.m.
SYDNEY	7:05			<b>4:24</b>		
Gosford	8:18			<b>5:41</b>		
Broadmeadow	9:16			<b>6:36</b>		
Taree	<b>12:17</b>			<b>9:38</b>		
Kempsey	<b>1:58</b>			<b>11:19</b>		
Coffs Harbour	<b>3:30</b>			12:47		
GRAFTON City arr.	<b>4:45</b>			1:59		
Casino arr.	<b>6:04</b>			3:20		
Casino dep.	—			—>	3:35	3:36
LISMORE arr.	<b>6:41</b>			—	—	—
LISMORE dep.	<b>6:45</b>			—	4:00	—
Ballina	—			—	4:43	—
Byron Bay	<b>7:27</b>			—	5:14	—
Mullumbimby	<b>7:43</b>			—	5:32	—
MURWILLUMBAH arr.	<b>8:30</b>			—	6:12	—
MURWILLUMBAH dep.	—>	<b>8:45</b>	<b>8:55</b>	—		—
Kingscliff		—	—	—		5:30
Tweed Heads		<b>9:10</b>	—	—		5:43
Coolangatta		<b>9:15</b>	—	—		5:48
Burleigh Heads		—	<b>9:30</b>	—		6:09
SURFERS PARADISE		<b>9:55</b>	<b>9:50</b>	—		6:29
BRISBANE				6:00		

Courtesy Countrylink (State Rail)

NOTE: a.m. times are in light type; p.m. times are in bold type.

## QUESTION 32. (Continued)

- (i) At what time does the 7:05 a.m. XPT from Sydney arrive in Murwillumbah?

.....

- (ii) Bjorn is travelling from Sydney to Surfers Paradise by the 7:05 a.m. XPT, and then the Sunstate coach.

What is the earliest time he can arrive in Surfers Paradise?

.....

- (iii) Heidi wishes to travel to Tweed Heads by first catching the overnight XPT from Sydney.

At what time does her Sunstate coach depart Casino?

.....

- (c) A Whitsunday resort advertises the following accommodation rates.

	STUDIO DELUXE	SUITE DELUXE
	<i>Cost for 1–2 persons per room</i>	<i>Cost for 1–3 persons per room</i>
2 nights	\$247	\$267
Extra night	\$110	\$120
NOTE: Both the studio and the suite can accommodate an additional person. The rate for this additional person is \$56 per night.		

- (i) What is the cost of a Studio Deluxe room for three persons for three nights?

.....

.....

.....

- (ii) How much would these three people *save* by renting a Suite Deluxe room for three nights?

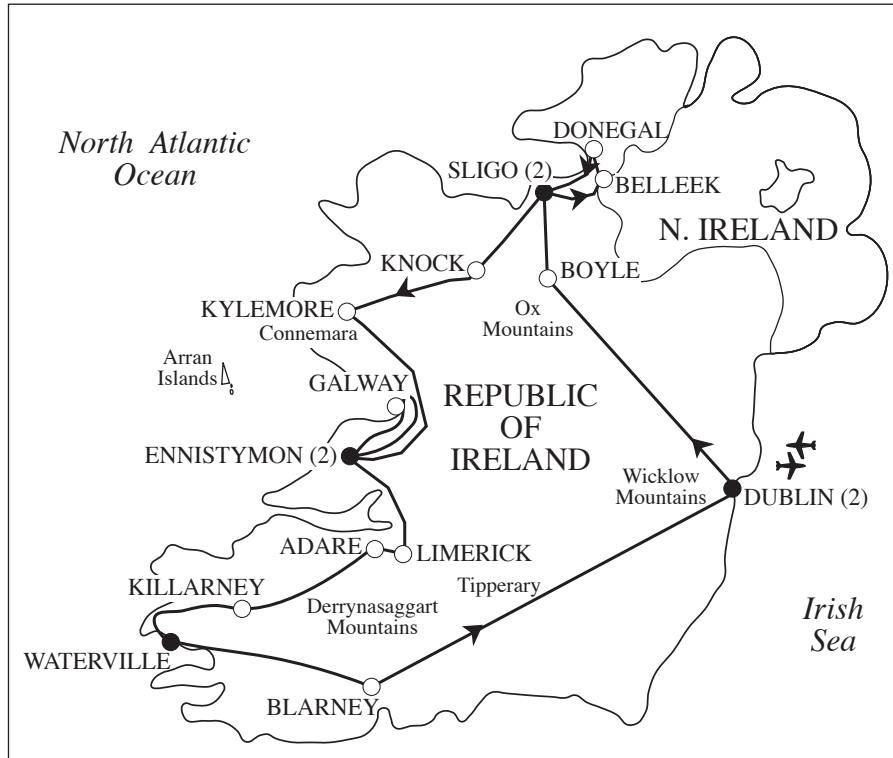
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## QUESTION 32. (Continued)

- (d) The map below is a representation of the eight-day Ireland Wanderer bus tour.



## KEY

● Overnight stays

( ) No. of nights if more than 1

Courtesy Trafalgar Tours.

- (i) In which town does the tour stop for only one night?

.....

- (ii) Which TWO places are visited on the day excursion that leaves from, and returns to, Sligo?

1. ....

2. ....

- (iii) The tour costs \$799 (Australian). \$1 (Australian) = 0.488 Irish pounds.

What is the cost of the tour in Irish pounds (to the nearest pound)?

.....

.....

## EXAMINER'S USE ONLY

## STUDENT NUMBER

Q. 33

**1997**  
**HIGHER SCHOOL CERTIFICATE EXAMINATION**  
**MATHEMATICS IN PRACTICE**  
**2 UNIT—SECTION II**

## CENTRE NUMBER

**QUESTION 33. Accommodation**

(a) Liem is considering two options for selling his property:

- Option one: *Smithers and Ipikiss Auctioneers*.

The fees for auctioning his home are \$500 plus 1.5% of the sale price.

- Option two: *Tittlmipp Real Estate*.

The local real-estate agent charges fees according to the schedule below:

<i>Value of sale</i>	<i>Agent's fee</i>
\$0 to \$50 000	4%
From \$50 001 to \$100 000	\$2000 plus 2% of each \$1 over \$50 000
\$100 000 and over	\$3000 plus 1% of each \$1 over \$100 000

- (i) Liem's house is sold by Smithers and Ipikiss Auctioneers for \$180 000.

Calculate the fee that Liem pays.

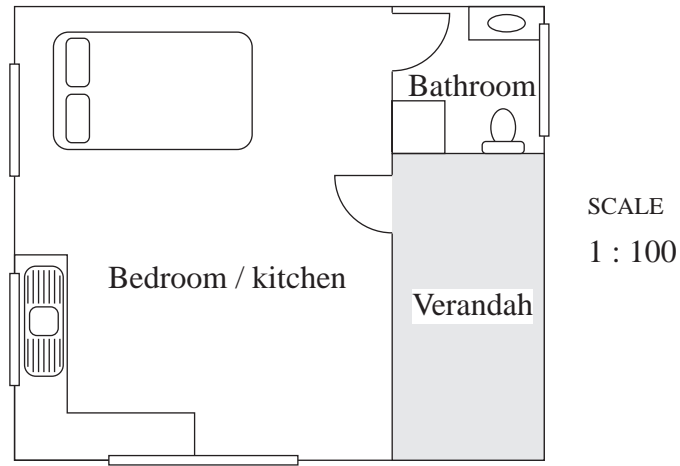
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 .....

- (ii) If Tittlmipp Real Estate had sold Liem's house for \$180 000, how much *extra* would he have paid in fees?

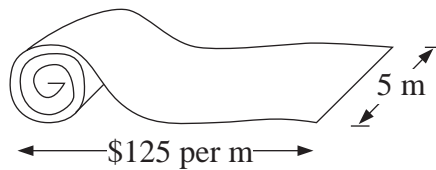
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## QUESTION 33. (Continued)

- (b) Tommy and Pamela wish to build a flat for Pamela's mother. The floor plan of the flat is shown below.



- (i) Find the cost of carpeting the bedroom/kitchen area if a 5 metre-wide roll of carpet costs \$125 per metre.



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- (ii) Find the total area of the flat, including the verandah.

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- (iii) Find the cost of building the flat at \$690 per square metre.

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## QUESTION 33. (Continued)

- (iv) A building supplier sells aluminium-framed windows at the following prices.

<i>Width of window</i>	<i>Cost per window</i>
1.2 metres	\$132
1.5 metres	\$165
2.0 metres	\$220
2.5 metres	\$275

NOTE: All windows have the same standard height.

Find the total cost of the windows for the flat.

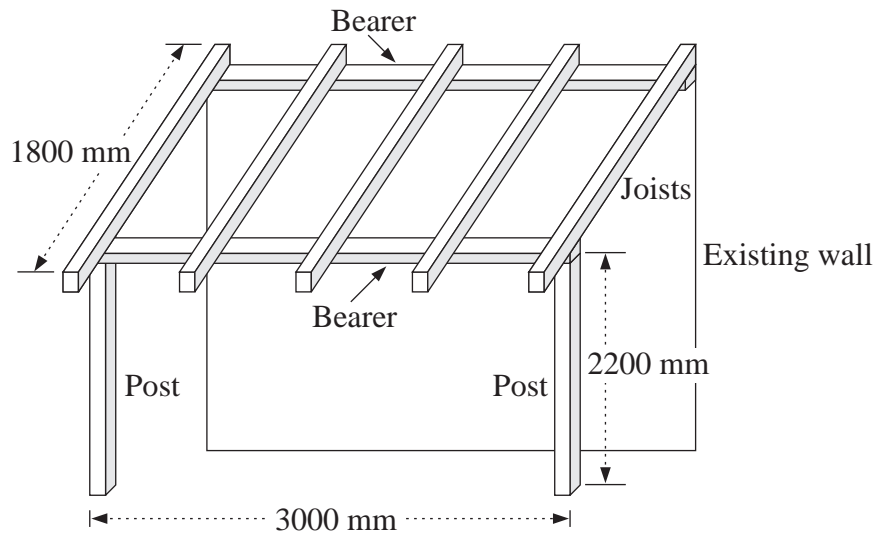
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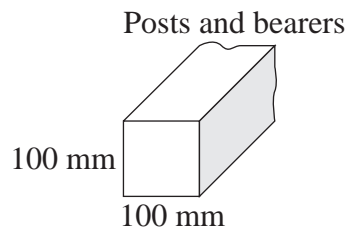
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## QUESTION 33. (Continued)

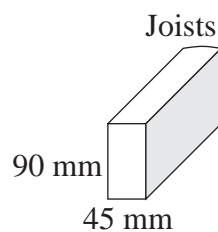
- (c) A pergola is to be built onto an existing wall, as in the diagram.



The posts and bearers are to be built from 100 mm  $\times$  100 mm treated pine timber and the joists from 90 mm  $\times$  45 mm treated pine timber.



Cost: \$8.50 per metre



Cost: \$6.00 per metre

- (i) Find the total length of timber required for the posts and bearers.

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- (ii) Calculate the cost of purchasing the timber required for the posts and bearers.

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- (iii) Calculate the total cost of timber required to build this pergola.

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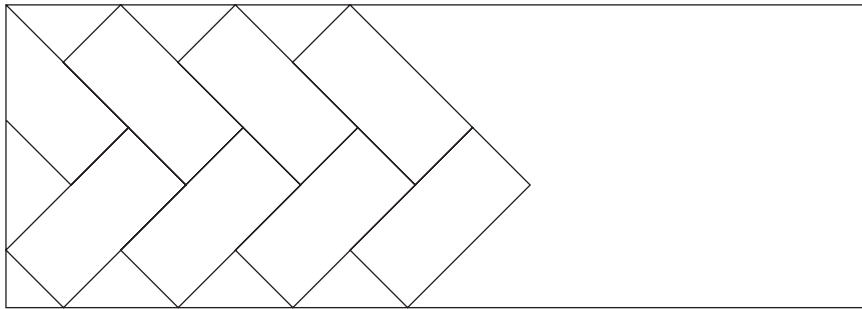
**EXAMINER'S USE ONLY****STUDENT NUMBER**

Q. 34

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MATHEMATICS IN PRACTICE  
2 UNIT—SECTION II**

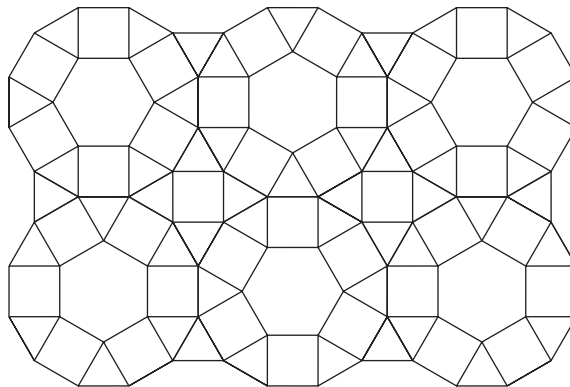
**CENTRE NUMBER****QUESTION 34. Design**

- (a) A garden path is constructed by laying bricks in a pattern as shown in the diagram.



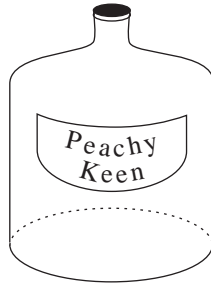
Continue the pattern to fill in the rest of the space in the rectangle.

- (b) Squares and triangles are used in the tiling pattern below. Name another regular geometrical shape in this tiling pattern.



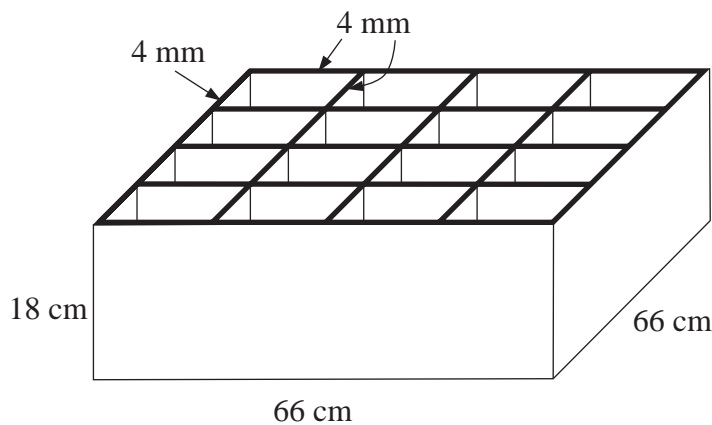
## QUESTION 34. (Continued)

- (c) 'Peachy Keen' fruit juice is sold in glass bottles, as illustrated.



Sixteen of these bottles are tightly packed into the cardboard box shown below. The box is fitted with cardboard dividers to separate the bottles.

Each divider is 4 mm thick. The sides of the box are also 4 mm thick. The diagram shows this and the outside dimensions of the box.

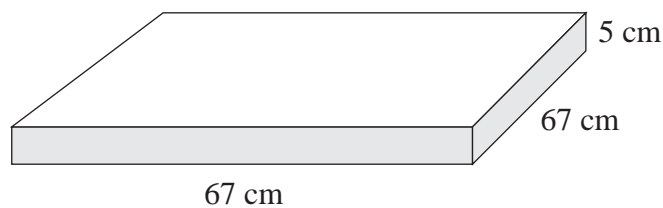


NOT TO  
SCALE

- (i) What is the diameter of the base of a 'Peachy Keen' bottle?

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- (ii) A cardboard lid for the above box has outside dimensions as shown.

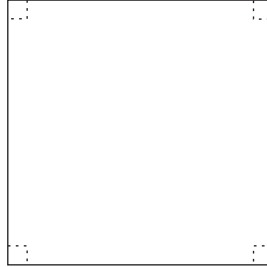


What is the surface area of the outside of the lid?

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## QUESTION 34. (Continued)

- (iii) This cardboard lid is to be made from a square sheet of cardboard by cutting a small square from each corner.



The cardboard is then folded to make the lid shown in part (ii).

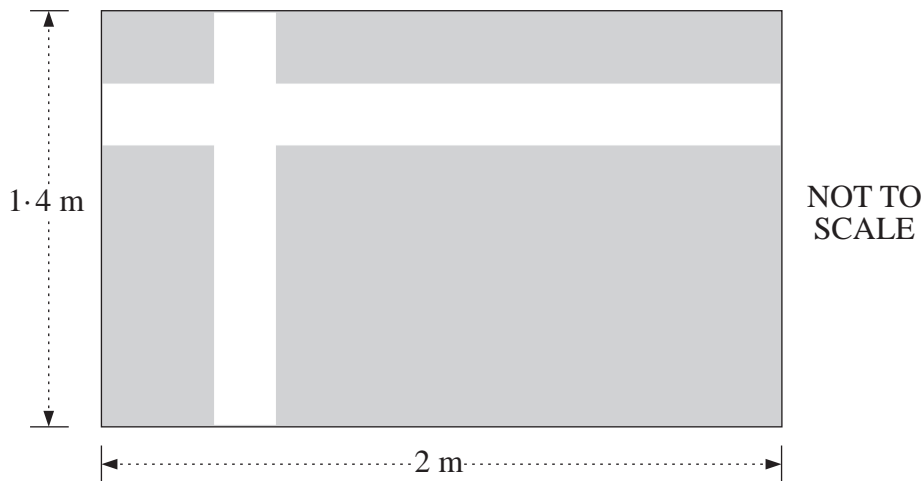
1. What is the length of the side of each of the small squares cut from the corners?

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2. What is the area of the square sheet of cardboard used to make the lid?

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- (d) The flag shown below has a white cross on a blue background, with dimensions as shown.



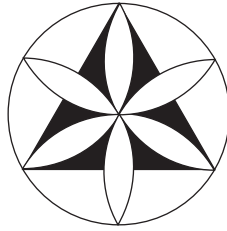
The white stripes forming the cross are 0.2 m wide.

What is the area of the white cross?

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## QUESTION 34. (Continued)

(e)



In the space below, enlarge the above design so that the outside circle has a diameter of 8 cm.

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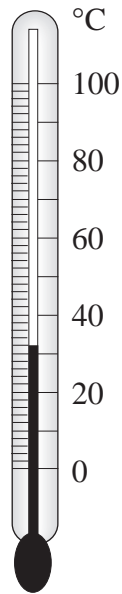
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**CENTRE NUMBER**

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**QUESTION 35. Social Issues**

(a)

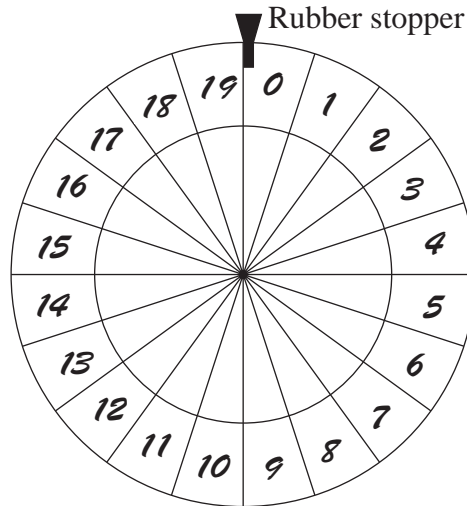


What temperature does this thermometer show?

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## QUESTION 35. (Continued)

- (b) The wheel below is spun to determine the winning number.



When the wheel stops spinning, a rubber stopper points to the winning number. Each number is equally likely to win.

- (i) What is the probability that the number 3 wins?

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- (ii) What is the probability that an even number greater than 7 wins?

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- (iii) The wheel is spun 100 times.

How many times do you expect a 0 or a 1 to win?

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- (c) A pair of jeans is advertised in a sale as '100% off'. The ticketed price was marked down from \$50 to \$25.

Show that the advertising is wrong, by stating what the actual discount is.

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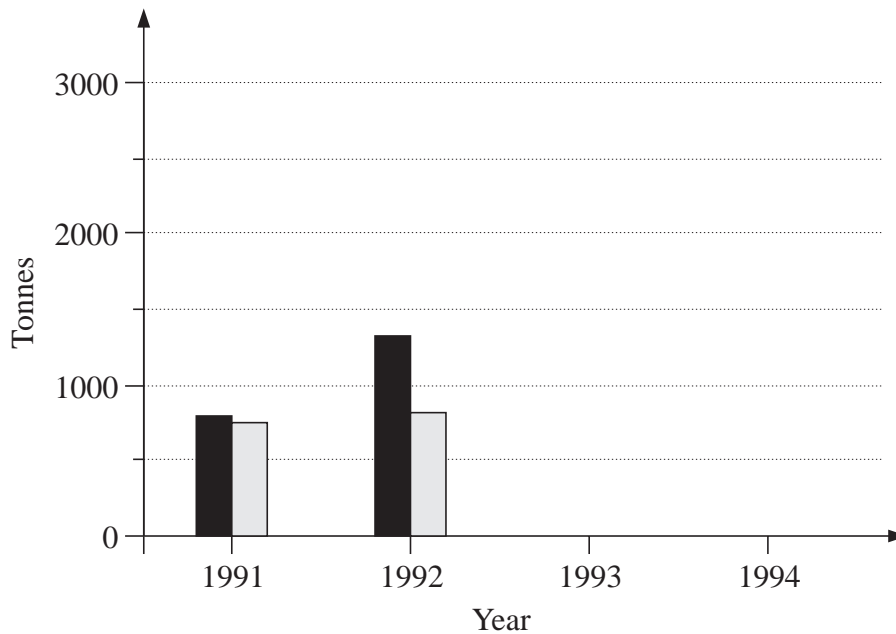
## QUESTION 35. (Continued)

- (d) The table shows the amount in tonnes of plastic (PET) bottles and aluminium cans that have been recycled in Sydney over recent years.


RECYCLING IN SYDNEY (AMOUNT IN TONNES)

	1991	1992	1993	1994
Plastic (PET) bottles	794	1329	2314	2846
Aluminium cans	757	817	728	749

- (i) Complete the graph below to show this information.



KEY

 Plastic (PET) bottles

 Aluminium cans

- (ii) Describe the trends shown in the graph for the recycling of plastic (PET) bottles and aluminium cans.

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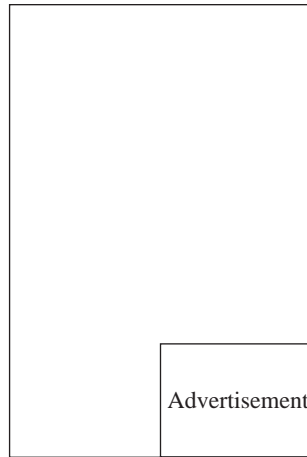
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## QUESTION 35. (Continued)

- (e) A page of a magazine is drawn here to scale.



- (i) What fraction of the area of the page is taken up by the advertisement?

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- (ii) The actual width of the magazine page is 20 cm. The advertisement costs \$4.25 for each square centimetre of area.

What is the cost of this advertisement?

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