

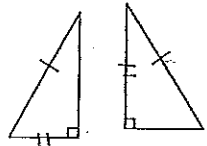
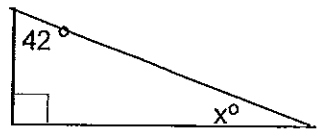
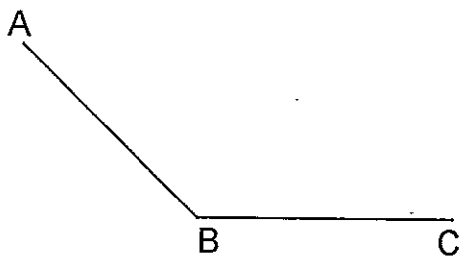
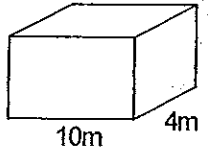
Student's Name..... Teacher's Name KS EST JR LC DG

SECTION A (24 marks)

Each question is worth 1 mark. Answers only in the answer column.

Any rough working should be done near the question or on spare paper provided.

Questions		Answers only
1.	$3a - a =$	
2.	$\frac{1}{3} + \frac{2}{5}$	
3.	Write 40% as a fraction.	
4.	Write $\frac{2}{7}$ as a decimal correct to 3 decimal places.	
5.	If $a = 3$ and $b = -5$ evaluate $ab - 12$	
6.	Find 30% of 1 hour.	
7.	Expand $a(2a - 3)$	
8.	Factorise $4m + 12$	
9.	Write the formula for the circumference of a circle, given the radius.	
10.	Increase 120 by 15%.	
11.	For the scores 5, 6, 6, 6, 9, 10, 10, 15, 19	Mean =
12.		Mode =
13.	Calculate $\sqrt{8.4^2 - 4.6^2}$ correct to 1 decimal place.	
14.	Simplify 10 : 15	
15.	Solve for x: $2x - 3 = 5$	
16.	Find the median of the scores 2, 8, 22, 16, 15, 9	

17.	I can run 400m in 66 seconds. Find my speed in m/s correct to 1 decimal place.	
18.	State the congruence test for the following triangles: 	
19.	 Find x	
20.	Bisect $\angle ABC$ using a pair of compasses and a ruler only and showing all construction lines clearly.	
21.	 Find the volume of this solid.	
22.	Rachel does casual work at a coffee shop. Her <i>normal rate</i> of pay is \$12 per hour. Last week she worked 15 hours at the <i>normal rate</i> and 6 hours at <i>time-and-a-half</i> . How much did she earn last week?	
23.	A map has a scale of 1 : 25 000. A road has an actual distance of 2km. What is the distance on the map, in millimetres?	mm
24.	Solve $\frac{4}{5} = \frac{5}{x}$	x =

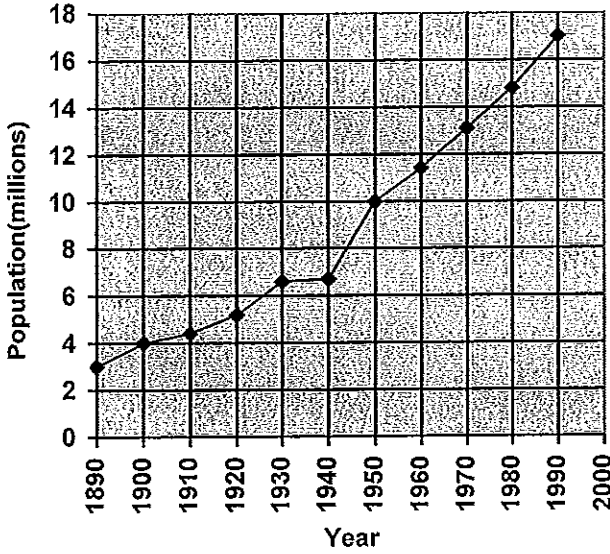
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SECTION B (24 marks)

SHOW ALL WORKING

Question 1 (3 marks)

POPULATION OF AUSTRALIA



a) What was Australia's population in 1900?

.....

b) In which decade did Australia's population increase at the highest rate?

.....

c) What was the percentage increase in Australia's population between 1900 and 1950?

.....

Question 2 (5 marks)

a) Find the simple interest on \$1200 at 3% p.a. for 5 years.

b) Camilla raised \$126 in her form's charity raffle and this was 6% of the money raised. How much money was raised altogether?

Question 3 (4 marks)

a) Simplify the ratio 10 minutes : 2 hours.

S 5

b) The ratio of senior students to junior students in a school is 2 : 7. If there are 630 students in the school, how many junior students are there?

✓
900

Question 4 (6 marks)

a) A bushwalker can average about 4 km/h. If she started a 12km walk at 2:00 p.m. what time should she finish?

b) (i) Convert 40 km/h to m/s to 2 decimal places.

(ii) 40 km/h > 11m/s. True or False?

Question 5 (6 marks)

An office manager installed a device to record the number of rings on the telephones in the office before it was answered.

Number of rings (x)	Frequency of calls (f)	$f \times x$
1	3	
2	5	
3	7	
4	8	
5	7	
TOTALS		

a) Complete the frequency distribution table above.

b) How many calls were there?

c) Calculate the mean.

.....

.....

d) What is the mode?

e) What is the median?

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SECTION C (24 marks)**SHOW ALL WORKING****Question 1 (9 marks)**

Simplify

a) $\frac{14ab}{15c} \div \frac{35abc}{36}$

b) $6x - 4x(x + 3)$

c) $(4a^2)^2 \div 8a^0 \times 2a$

d) $\frac{x}{3} - \frac{x-1}{2}$

Question 2 (2.5 marks)

Expand and simplify

a) $(x-3)^2$

b) $(5x-7)(3x+2)$

Question 3 (8 marks)

Solve:

a) $3p - 1 = 8$

b) $5 - 4k = 6k - 7$

c) $2x - \frac{3x}{5} = \frac{3}{4}$

d) $7 - 3(2 - 5x) = 21 - 5x$

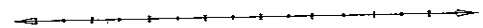
Question 4 (2 marks)

If $S = \frac{a}{1-r}$, find r if $S = 40$ and $a = 50$.

Question 5 (2.5 marks)

a) Solve $10 - 3x > 4$

b) Graph the solution on the number line.



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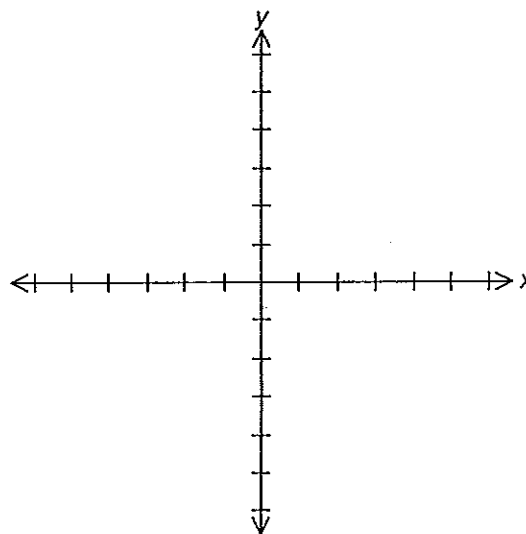
SECTION D (24 marks)

SHOW ALL WORKING

Question 1 (6 marks)

a) Complete the table of values below and draw the line $y = 3 - 2x$ on the number plane provided.

x	-1	0	1
y			



- b) On the same number plane also draw the line $x = 2$.
- c) Clearly label each line with its equation and from your graph write down the point of intersection of these lines.

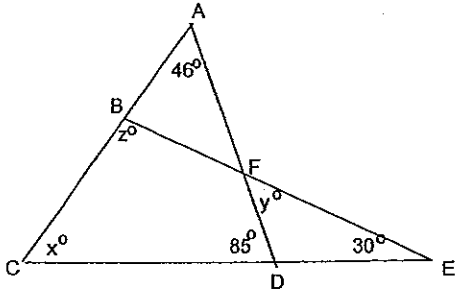
.....

d) Without drawing a diagram, and showing all working determine whether or not $(-2, -3)$ lies on the line $5x - 3y = 1$.

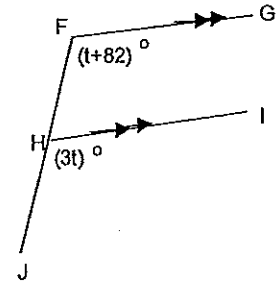
Question 2 (6 marks)

Find the value of each pronumeral, giving full reasons.

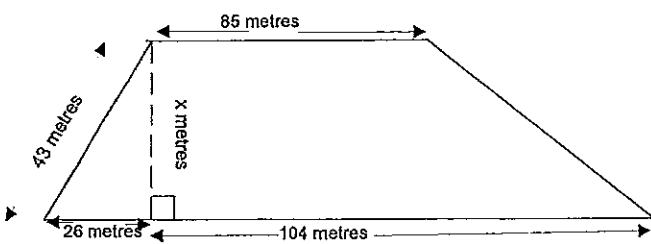
a)



b)



Question 3 (6 marks)



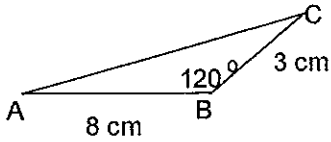
a) Write the formula for the area of a trapezium.

b) Find the length of x correct to the nearest metre?

c) Find the area of the trapezium to the nearest m^2 .

Question 4 (4 marks)

a) Construct the following triangle ABC using a ruler and a pair of compasses only:

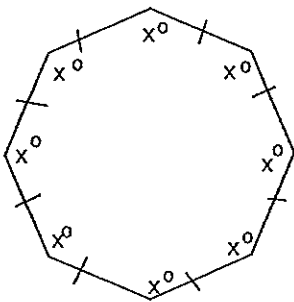


b) Use a protractor to measure the size of $\angle ACB$ in your diagram.

$\angle ACB = \dots\dots\dots$

Question 5 (2 marks)

Find x given that the figure is a regular octagon



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SECTION E (24 marks)
Question 1 (3 marks)

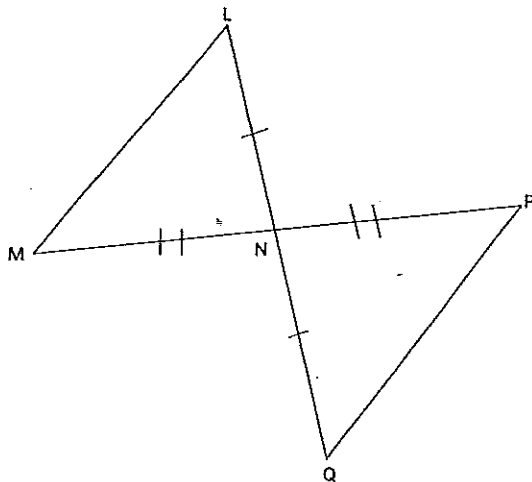
SHOW ALL WORKING

TAXABLE INCOME	TAX
\$1 - \$5400	Nil
\$5 401 - \$20 700	Nil plus 20 cents for each \$1 over \$5400
\$20 701 - \$36 000	\$3060.00 plus 35.5 cents for each \$1 over \$20 700
\$36 001 - \$38 000	\$8 491.50 plus 38.5 cents for each \$1 over \$36 000
\$38 001 - \$50 000	\$9261.50 plus 44.125 cents for each \$1 over \$38 000
\$50 001 and over	\$14556.50 plus 47 cents for each \$1 over \$50 000

Ms. P. Bloggs earns \$40 000 a year and has allowable deductions totalling \$3420.

- a) Calculate her taxable income.
- b) Calculate her tax payable using this tax table.

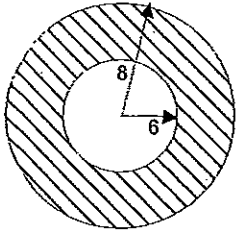
Question 2 (5 marks)



a) Prove $\triangle LMN \cong \triangle QPN$

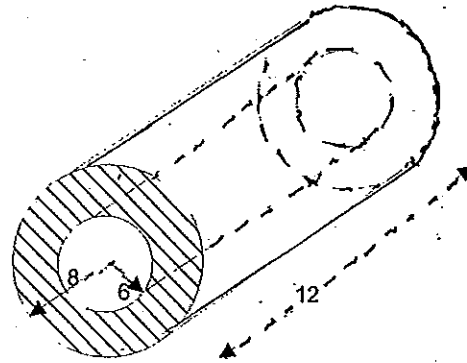
b) Hence prove $LM \parallel PQ$

Question 3 (5 marks)



a) Find the shaded area correct to 1 decimal place. All measurements are in centimetres.

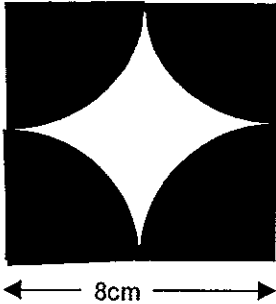
b) Hence find the volume of metal in this open pipe correct to the nearest cubic centimetre. All measurements are in centimetres.



Question 4 (4 marks)

A 24 hectare area is to have 330 homes built on it, each with a square block of land. Calculate the dimensions of each block correct to the nearest metre.

Question 5 (3 marks)



Calculate the unshaded area if shaded areas are all the same.

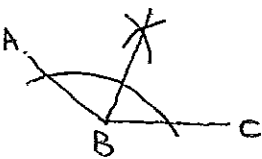
Question 6 (4 marks)

Three consecutive integers are such that the sum of one quarter of the smallest number, one fifth of the middle number and one sixth of the largest number is 40. Write an equation representing this information and solve it to find the numbers.

THE END

ANSWERS

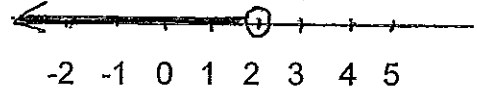
Section A

1. 2a 2. $\frac{11}{15}$ 3. $\frac{4}{10}, \frac{2}{5}$ 4. 0.286 5. -27 6. 18 mins 7. $2a^2 - 3a$ 8. $4(m+3)$ 9. $C = 2\pi r$
 10. 138 11. 9.5 12. 6 13. 7.0 14. 2:3 15. $x = 4$ 16. 17. 6.1m/s 18. RHS 19. 48
 20.  21. 200cm^3 22. \$288 23. 80 mm 24. $6\frac{1}{4}$

Section B

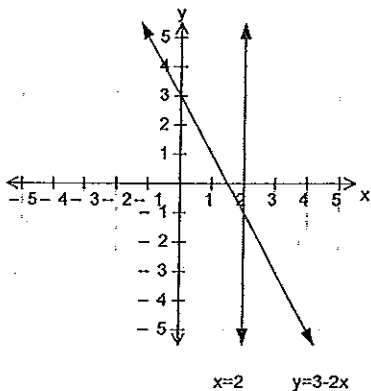
- 1.a) 4 million b) 1940-50 c). 150% 2.a) \$180 b) \$2100 3.a) 1:12 b) 490 4.a) 5pm
 b)(i) 11.1 m/s (ii) True 5.b) 30 c) 3.36 d) 4 e) 3.5

Section C

- 1.a) $\frac{24}{25c^2}$ b) $-4x^2 - 6x$ c) $4a^5$ d) $\frac{3-x}{6}$ 2.a) $x^2 - 6x + 9$ b) $15x^2 - 11x - 14$ 3.a) $p=3$
 b) $k = \frac{6}{5}$ c) $x = \frac{15}{28}$ d) $x = 1$ 4. $r = -\frac{1}{4}$ 5.a) $x < 2$ b) 

Section D

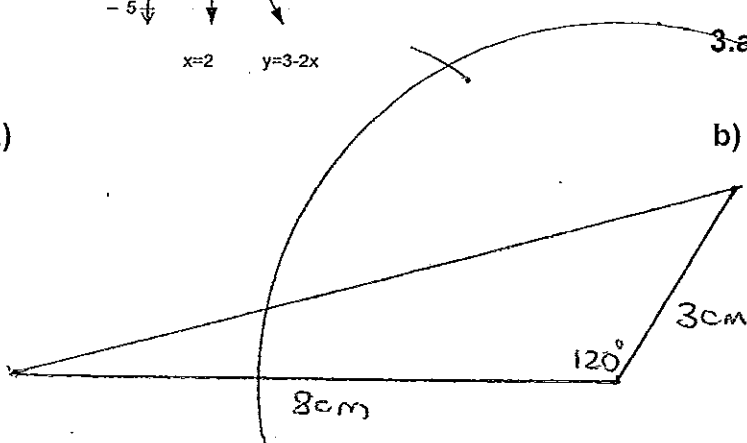
- 1.a) 5 3 1
 b) c) (2,-1) d) By LHS, RHS method (-2,-3) doesn't lie on line $5x - 3y = 1$



- 2.a) $x = 49$ (\angle sum of $\triangle ACD$)
 $y = 55$ (ext \angle of $\triangle FDE$)
 $z = 101$ (\angle sum of $\triangle BCE$)
 There are various other methods so check with your teacher!

- b) $t = 41$ (corresponding \angle 's $FG \parallel HI$)

- 4.a) 3.a) $A = \frac{1}{2}h(a+b)$ b) 34m c) 3655m^2
 b) 45° 5. $x = 135$



Section E

1.a) \$36 580 b) \$8 714.80

2.a) In $\triangle LMN$ and $\triangle QPN$

1. $MN = PN$ (given)
 2. $LN = QN$ (given)
 3. $\angle LNM = \angle QNP$ (vertically opposite \angle 's)
- $\therefore \triangle LMN \cong \triangle QPN$ (SAS)

b) $\angle LMN = \angle QPN$ (corresponding \angle 's in congruent \triangle 's)
 $LM \parallel PQ$ (alternate \angle 's equal)

3.a) 88.0 m^2 b) 1056 m^3

4. 27m by 27m

5. $13.7345... \text{ cm}^2$

6. 64, 65 and 66

W.S.T.