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HSC General Mathematics
Assignment 3

To be completed on A4 paper
Full working out must be shown

DUE: ____________________________

2 1. The planet Jupiter is five hundred and eighty nine million kilometres from Earth. Write this distance in standard notation.

1 2. Find the value of $\dfrac{(12.34)^2}{15.68 - 13.87}$ correct to 2 decimal places

3 3. Solve for x: $\dfrac{x-3}{4} = \dfrac{x-2}{5}$

2 4. A manufacturer increases the price of a car by 25% to a new selling price of \$26 000. What was the selling price of the car before this increase?

1 5. A jar contains 15 Smarties; 7 red, 5 green and 3 yellow. One is chosen at random. What is the probability that it is neither red nor green?

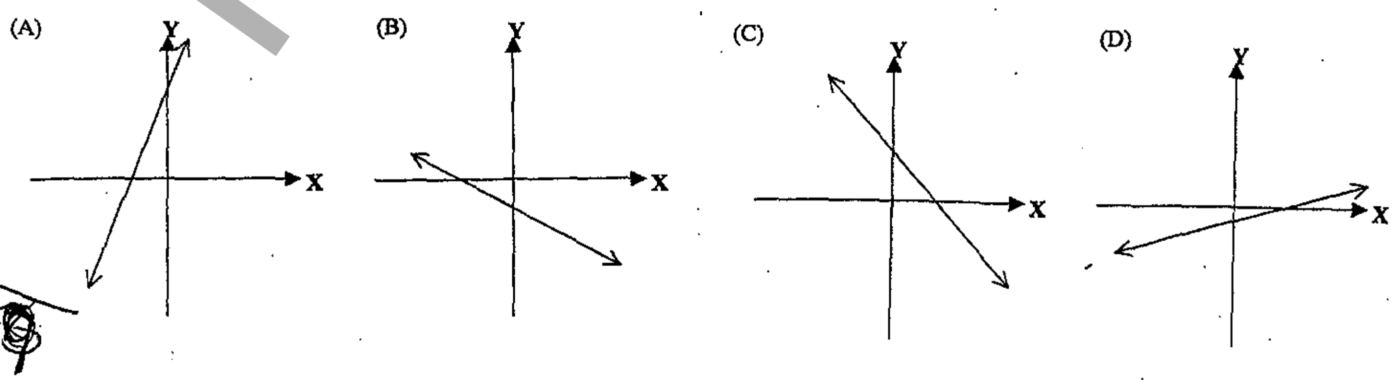
6. A surveyor conducts a traverse survey of a field and makes these entries in a notebook. (All measurements are in metres)

	B	
	30	8D
C12	27	
	15	20E
	0	
	A	

2 a) Draw a sketch of the field
3 b) Find the area of the field
1 c) What is the length of AE?

3 7. Town A is 40 km due east of Orange. Town B is due north of Town A on a bearing of 046^0 from Orange. What is the distance from Town B to Orange?

1 8. Which of these graphs represents an increasing function with a positive Y intercept?



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9. An estate agent charges commission according to the following table.

Value of Sale	Agent's Fee
Up to and including $50 000	5%
On the next $100 000	3%
On the next $200 000	2.5%
Thereafter	2%

3 a) Draw the graph of the agent's fee against sale values from $0 to $500 000

1 b) Use the graph to find the sale value that would return the agent a fee of $15 000

10. Use this Loan Repayment Table to answer the questions below.

LOAN REPAYMENTS TABLE

Figures in table show the monthly instalments to be paid on $1000 loan.

Years	5%	6%	7%	8%	9%	10%
1	85.61	86.07	86.53	86.99	87.45	87.92
2	43.87	44.32	44.77	45.23	45.68	46.14
3	29.97	30.42	30.88	31.34	31.80	32.27
4	23.03	23.49	23.95	24.41	24.89	25.36
5	18.87	19.33	19.80	20.28	20.76	21.25
6	16.10	16.57	17.05	17.53	18.03	18.53
7	14.13	14.61	15.09	15.59	16.09	16.60
8	12.66	13.14	13.63	14.14	14.65	15.17
9	11.52	12.01	12.51	13.02	13.54	14.08
10	10.61	11.10	11.61	12.13	12.67	13.22

1 (i) How much per $1000 borrowed would have to be paid in monthly instalments to repay a loan in 10 years if the interest rate were 7% p.a.?

2 (ii) A home buyer can afford to pay $900 per month in home loan repayments. How much could they borrow at 7% p.a. interest if they want to repay the loan in 10 years?

2 (iii) A home buyer has a loan of $50 000 at 10% p.a. and is repaying the loan at a rate which will clear the debt in 10 years. How much faster would the loan be repaid with the same instalments if interest rates fell to 6% p.a.?

2 (iv) Another couple are paying $1365.30 per month on a $90 000 loan for which the interest is 10% p.a. How much would they have to pay per month to repay the loan in half the time?

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