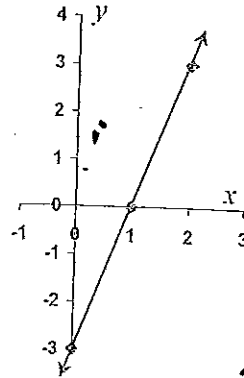
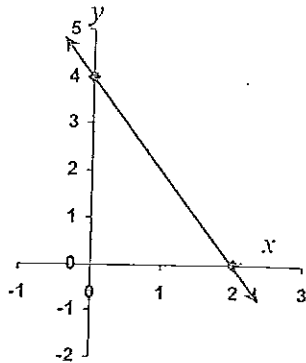
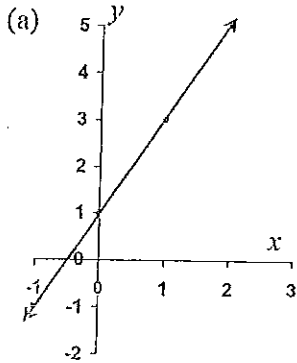


REVIEW EXERCISE - LEVEL 1

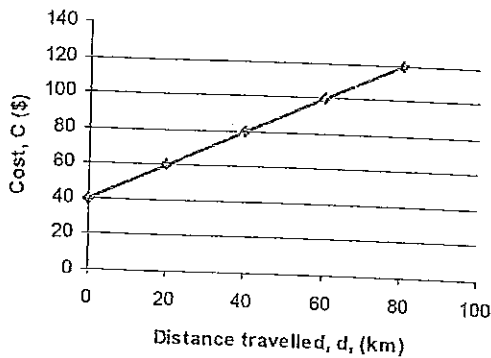
1. Graph each line on a separate number plane
 (a) $y = 2x - 3$ (b) $y = x + 1$ (c) $y = 7 - 3x$

2. For each line work out the gradient and hence state the equation of the line.



3. The graph represents the cost of hiring a car from the Nova Car Hire Company.

- (a) What does the company charge to hire the car?
 (b) How much are you charged if you travel 20 kilometres?
 (c) What is the gradient of this line? What does it represent?
 (d) Write down the equation of the line in terms of C and d .



4. Graph the following on separate number planes. Use values of x between -3 and $+3$.

- (a) $y = x^2 + 1$ (b) $y = x^2 - x - 2$ (c) $y = 4 - x^2$
 (d) $y = \frac{1}{3}x^3$ (e) $y = \frac{6}{x}$ (f) $y = 2^x$

5. The table shows some results from an experiment to determine the relationship between the variables M and x .

M	8	16	20
x	40	80	100

- (a) If $x = 120$, what is the value of M ?
 (b) If $M = 18$, what is the value of x ?
 (c) Express the relationship as a formula in M and x .

6. (a) If $y = kx$ and $y = 10.5$ when $x = 7$, find y when $x = 10$.
 (b) If $y = kx^2$ and $y = 18$ when $x = 2$, find y when $x = 8$.
 (c) If $y = \frac{k}{x}$ and $y = 4$ when $x = 4$, find y when $x = 8$.

7. In this table, T varies inversely as q .

(a) Find T when $q = 20$.

(b) Find q when $T = 16$.

(c) Express the relationship as a formula in T and q .

T	10	8	4
q	4	5	10

8. The graph represents Jason's bike ride from Muirfield to Ashfield.

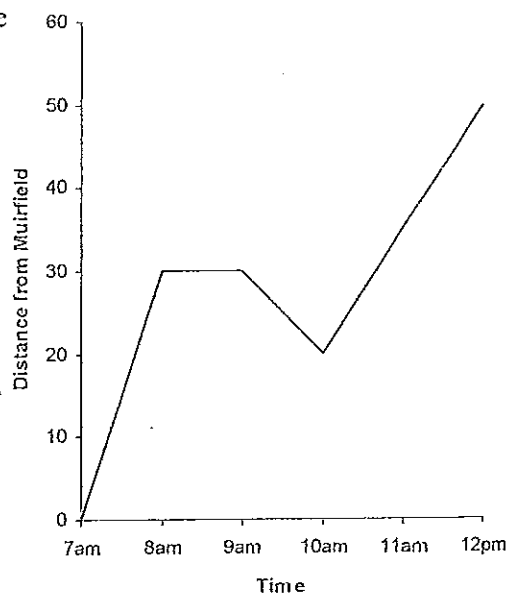
(a) At what time did Jason leave Muirfield?

(b) How far is it from Muirfield to Ashfield?

(c) During which times did Jason travel the fastest?

(d) Explain what is happening when the graph is horizontal.

(e) Write a brief account of what might have happened at each of the four stages of his journey.



9. In an experiment, the following data points were obtained:

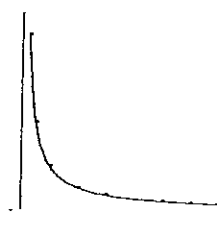
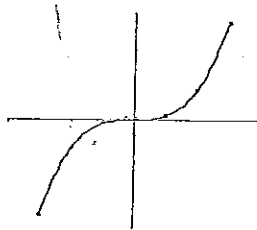
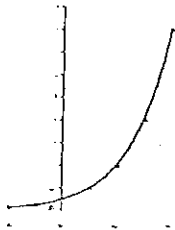
(2, 5) (2, 4) (3, 4) (4, 4) (4, 3) (6, 2) (7, 2)

(a) Graph the points and draw a line of best fit.

(b) Determine the equation of your line.

REVIEW EXERCISE – LEVEL 2

1. Match each graph with an equation from those given.



i. $y = \frac{11}{10}x^3$

ii. $y = \frac{4}{x}$

iii. $y = e^x$

2. When a ball is thrown, its path is approximated by the equation: $y = 40x - 5x^2$, where y is the height above the ground and x is the horizontal distance travelled. (Units are in metres.)

- (a) Complete the table for this curve and graph it.

x	0	2	4	6	8
y		60			

- (b) What is the highest point reached by the ball?
- (c) How far from where it is thrown does the ball land?
3. (a) If T varies as x and $T = 16$ when $x = 10$, find T when $x = 16$.
- (b) If y varies as the square of x , and $y = 43$ when $x = 5$, find y when $x = 9$.
- (c) If m varies inversely as the square of p , and $m = 10$ when $p = 4$, find m when $p = 6$.
4. (a) If 4.7 kg of lawn food covers 60 square metres, how many kilograms are required for 140 square metres of lawn?
- (b) If 8 men take 15 hours to dig a 15 metre trench, how long would it take for 10 men to dig a 15 metre trench?
5. The population growth in a small town is estimated by: $P = 1000e^{0.02t}$, where P is the population and t the number of years since 2005.

- (a) Complete the table for this equation and graph it.

t	0	2	4	6	8	10	12
P							

- (b) Estimate the population in 2011.
- (c) Use the graph to estimate when the population will be 1300.