01. Evaluate:	04. Given that $Z_1 = 2 + 3i$ , $Z_2 = 4 - 2i$
(a). $(27)^{\frac{1}{3}}$	Find $(\mathbf{Z}_1 - \mathbf{Z}_2)$ .
(a). (27)°	
-2	
(b). $(125)^{\frac{-2}{3}}$	
	05. Make P the subject in the equation
	$S = \sqrt{\frac{R}{P}}$
	V 1
02. Find the standard deviation of the following	
scores. 10, 21, 12, 14 and 18	
	06. Complete the formulae below. $a^n = a^n$
	$\lim_{n \to a} \frac{x^n - a^n}{x^m - a^m} = \underline{\hspace{1cm}}$
	07. If $\begin{pmatrix} x & 9 \\ 0 & 4 \end{pmatrix} = \begin{pmatrix} 6 & 9 \\ y & 4 \end{pmatrix}$ Find the values of x and y.
	(0 4) (y 4)
02 Find V given that log 10 = 1	
03. Find X given that $\log_x 10 = \frac{1}{2}$	

08. Solve the following pair of simultaneous equation		
	4x + y = 7 $6x - y = 3$	
09. Solve the inequalit	xy x + 6 ≥ 12	
10. Find the accord do		
y = $2x^3 + 6x^2 + 9x + 4$	erivation of the function.	

## (b). Solve the equation for $O^0 \le \theta \le 180^0$ Section B (60 Marks) Attempt ALL Five questions in this section. 11. A fair die is tossed once. Find the probability that (a). The number shown on the top is even or odd. 13. Calculate the volume of X in the following: (a). X! = 24(b). The number shown on the top is than 5 (b). $C_3^x = C_3^4$ 12. Given that $Cos^2\theta + Sin^2\theta = 1$ . Show that (a). $1 + \tan^2 \theta = \operatorname{Sec}^2 \theta$

14. The displacement of particle after t seconds is given by $S = 4t^3 - t^2$ , Calculate:	(b). $X^2 + y^2 + 10x + 4y + 4 = 0$ is the equation of a circle. Find its center and radius.
(a). The displacement after 2 seconds	
(b). The velocity after 2 seconds	16. Given that Z = $1 + \sqrt{3i}$ , find the following: (a). The modulus of Z.
	(b). The argument of Z.
15. (a). Let (a, b) be the center of a circle and r is its	
radius. Write down the equation of the circle	
	17 (a) From first principles differentiate y = y <sup>2</sup>
	17. (a). From first principles, differentiate y = x <sup>2</sup>

(b). The figure below shows the graph of the curve  $y = x^2 + 3$ . Calculate the shaded area


