

Circle the correct answer			
1	x=3 cost, y=3 sint represent:		
A	Line	B	Circle
C	Parabola	D	Hyperbola
2	If $f(x) = x^2 - x$ then $f(-2)$ is equal to:		
A	2	B	6
C	-6	D	0
3	$2 \sinh x =$		
A	$e^x - e^{-x}$	B	$e^x + e^{-x}$
C	$\frac{e^x - e^{-x}}{2}$	D	$\frac{e^x + e^{-x}}{2}$
4	$\lim_{\theta \rightarrow 0} \frac{\sin^2 \theta}{\theta};$		
A	0	B	1
C	2	D	∞
5	If at least one vertical line meets the curve at more than two points, then curve is:		
A	A function	B	Not a function
C	One-to-one function	D	Onto function
6	Let $f(x) = x^2 + \cos x$, then $f(x)$ is:		
A	Odd function	B	Constant function
C	Even function	D	Neither even nor odd function

Short Answers	
1	Define explicit and Implicit function
2	Determine whether the function $f(x) = x\sqrt{x^2 + 5}$ is even or odd.
3	Find $\frac{f(a+h) - f(a)}{h}$ and simplify where $f(x) = \sin x$.
4	Define Continuous function.
5	Prove that $\sinh 2x = 2 \sinh x \cosh x$
6	If $f(x) = (-x + 9)^3$ then verify that $f^{-1}(f(x)) = x$
7	Express each limit in term of $e, \left(1 - \frac{1}{n}\right)^n$

Long Questions	
1	Evaluate $\lim_{x \rightarrow 0} \frac{\sin ax}{\sin bx}$
2	If $F(x) = \begin{cases} mx & \text{if } x < 3 \\ n & \text{if } x = 3 \\ -2x + 9 & \text{if } x > 2 \end{cases}$ discuss continuity at $x=2$