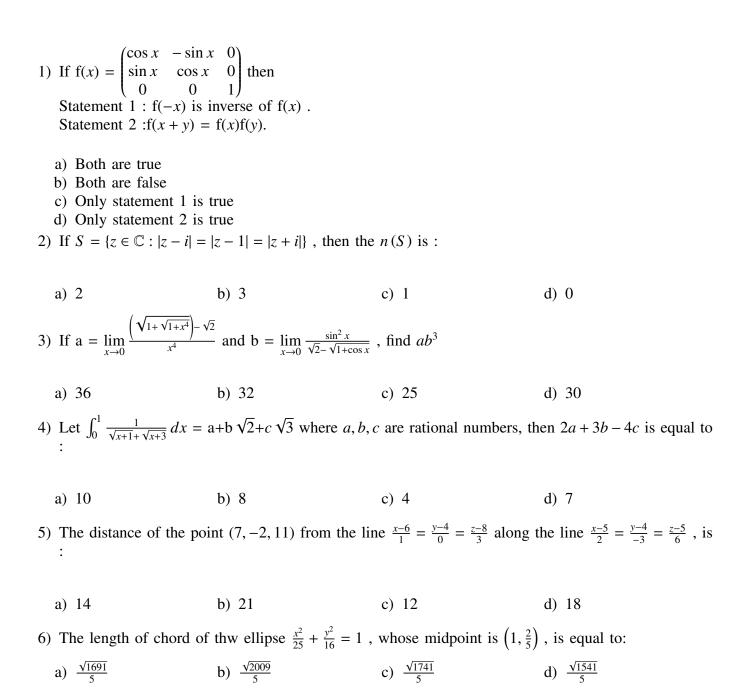
## Assignment 1

## EE24Btech11036 - Krishna Hanumanth Patil



- 7) Find number of common terms in the two given series;  $4, 9, 14, 19, \cdots$  up to 25 terms and  $3, 9, 15, 21, \cdots$  up to 37 terms
  - a) 9 b) 8 c) 5 d) 7
- 8) If the shortest distance of the parabola  $y^2 = 4x$  from the centre of the circle  $x^2 + y^2 4x 16y + 64 = 0$  is d, then  $d^2$  is equal to:

d) 24

9) Let $S = \{1, 2, 3, $ is:	$\dots$ , 10}. Suppose $M$ is the	set of all subsets of $S$ , th	e relation $R = \{(A, B) : A \cap B \neq$	$\phi; A, B \in M$ }	
<ul> <li>b) symmetric or</li> <li>c) symmetric ar</li> <li>d) reflexive only</li> <li>10) Let x = x(t) ar</li> </ul>	and reflexive only $y$ and $y = y(t)$ be the solution $b \in \mathbb{R}$ . Given that $x(0) = 0$	ns of the diffrential equal $2$ , $y(0) = 1$ and $3y(1) = 1$	tions $\frac{dx}{dt} + ax = 0$ and $\frac{dy}{dt} + by = 2x(1)$ , the value of $t$ , for where	= 0 nich	
<ul> <li>a) log<sub>3</sub> 4</li> <li>b) log<sub>4/3</sub> 2</li> </ul>	- 5		c) log <sub>4</sub> 3 d) log <sub>2</sub> 2		
11) If $^{n-1}C_r = (k^2 - 1)^{n-1}$	$8)^n C_{r+1}$ , then the range	of $k$ is			
a) $\sqrt{2} < k \le 3$ b) $2\sqrt{2} < k < 3$		c) $2 \le k < 3$ d) $2\sqrt{2} < k < 8$	c) $2 \le k < 3$ d) $2\sqrt{2} < k < 8$		
12) If the shortest of all possible		$\frac{x-4}{1} = \frac{y+1}{2} = \frac{z}{-3} \text{ and } \frac{x-\lambda}{2}$	$=\frac{y+1}{4} = \frac{z-2}{-5}$ , is $\frac{6}{\sqrt{5}}$ , then the s	sum	
a) 10	b) 5	c) 8	d) 7		
13) Let $a = \hat{i} + 2\hat{j}$ $a \cdot ((b \times c) - b - a)$		Let $c$ be the vector such	that $a \times c = b$ and $a \cdot c = 3$ .	Let	
a) 24	b) 36	c) 32	d) 20		
	e sum of all the coeeficie		$(1-3x+10x^2)^n$ and B enotes	the	
a) $A = B^3$	b) $A = 3B$	c) $B = A^3$	d) $3A = B$		
	ne $L: 4x + 5y = 20$ . Let rigin, then tangent of angle		and $L_2$ which trisect the line L $L_2$ is	and	
a) $\frac{25}{41}$	b) $\frac{30}{41}$	c) $\frac{2}{5}$	d) $\frac{3}{5}$		

c) 16

a) 36

b) 20