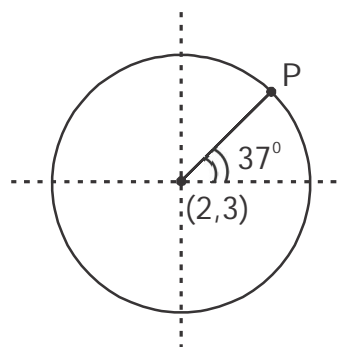


- Find equation of a straight line making an angle 37° with the positive X-axis and intersecting Y-axis at $Y = -4$
- Find equation of a straight line joining points $(1,0)$ & $(4, 3)$
- Linear mass density of a rod varies linearly from λ_0 to $2\lambda_0$ from left end to the right end of the rod. if the length of the rod is l . Find linear mass density " λ " as a function of distance " x " from the left end.



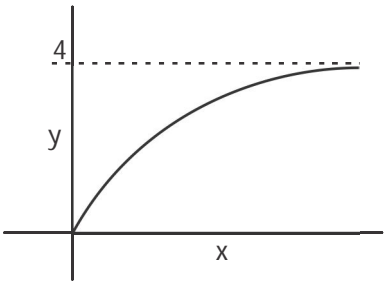
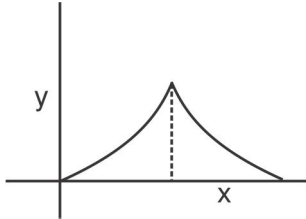
- Acceleration of a body decreases uniformly from 10 m/sec^2 to 5 m/sec^2 in 4 seconds. Find acceleration as a function of time
- Draw a graph such that
at $x = 0, y = 0$
as $x \rightarrow \infty y \rightarrow 4$
- Draw a graph such that
(1) $x = 0, y = 0$
(2) from $x = 0$ to $x = 2$, slope positive and increasing
(3) $x = 2$ to $x = 4$, slope is negative decreasing
- Find $\left[\frac{1}{2.03}\right]^2 \times 4$
- Equation of a straight line is $3x + 2y = 1$. If origin is shifted to $(1, 2)$, find equation of the line.
- Find equation of a circle whose centre is at $(1, 2)$ and radius is 2 units.
- Find maximum value of x and y coordinates of points lying on the circle (In equation 9)
- If radius is 5 units, find coordinates of point P.



12. Find the differentiation of the following functions with respect to x.

- (a) $\sqrt[3]{x}$ (b) $\frac{1}{x^2\sqrt{x}}$ (c) $\left(\sqrt{x} + \frac{1}{\sqrt{x}}\right)\left(\sqrt{x} - \frac{1}{\sqrt{x}}\right)$
- (d) $x \tan x$ (e) $x^2 \sec x$ (f) $\frac{\ln x}{x}$ (g) $\sin^2 x$
- (h) $(\ln x)^2$ (i) $3 \tan x \sin x$ (j) $\frac{\sin x \cos x}{\pi}$ (k) $\frac{\cos x}{\sqrt{1+\pi^2}}$
- (l) $x \sin \ln x$

Answers Key

1	$y = \frac{3x}{4} - 4$	2.	$y = x + 1$	3.	$\lambda = \lambda_0 \left(1 + \frac{x}{l}\right)$	4.	Ans. $a = -\frac{5t}{4} + 10$
5.		6 (3)					
7.	0.97	8.	$3x + 2y + 6 = 0$	9.	$(x - 1)^2 + (y - 2)^2 = 4$		
10.	$x = 3, y = 4$	11.	(6,6)				
12.	(a) $\frac{1}{3}x^{-\frac{2}{3}}$	(b) $-\frac{5}{2}x^{-\frac{7}{2}}$	(c) $1 + \frac{1}{x^2}$	(d) $\tan x + x \sec^2 x$			
	(e) $x^2 \sec x \tan x + 2x \sec x$	(f) $\frac{1 - \ln x}{x^2}$	(g) $\sin 2x$	(h) $\frac{2 \ln x}{x}$			
	(i) $3 \sin x (1 + \tan x)$	(j) $-\frac{\cos 2x}{\pi}$	(k) $\frac{-\sin x}{\sqrt{1+\pi^2}}$				
	(l) $\sin x + \sin x \ln x + x \ln x \cos x$						