



PHYSICS

BOOKS - DC PANDEY PHYSICS (HINGLISH)

BASIC MATHEMATICS

Example

1. Differentiate the following function with respect to x

$$e^{(5x+2)}$$

A. $5e^{x+2}$

B. e^{5x+2}

C. $5e^{5x+2}$

D. $5e^{5x}$

Answer: C



Watch Video Solution

2. Integrate the following functions with respect to x

$$\int(5x^2 + 3x - 2)dx$$

A. $\frac{5x^2}{3} + \frac{3x^2}{2} - 2x + c$

B. $\frac{x^3}{3} + \frac{3x^2}{2} - 2x + c$

C. $\frac{5x^3}{3} + \frac{3x^2}{2} - 2x + c$

D. $\frac{5x^3}{3} + \frac{x^2}{2} - 2x + c$

Answer: C



Watch Video Solution

3. What is the slope of following straight lines corresponding to equations

(a) $y = 2x$

(b) $y = -6x$

(c) $y = 4x + 2$

(d) $y = 6x - 4$

A. 2, -6, 4, 6

B. 2, -6, 4, 2

C. 3, -6, 4, 6

D. 2, -6, 2, 6

Answer: A



Watch Video Solution

4. Find maximum or minimum values of the functions

(a) $y = 25x^2 + 5 - 10x$

(b) $y = 9 - (x - 3)^2$

A. $x = \frac{1}{5}$ $Y = 4$

B. $x = \frac{1}{5}$ $y = 2$

C. $x = \frac{2}{5}$ $Y = 4$

$$D. x = \frac{1}{5} Y = 14$$

Answer: A



Watch Video Solution

Exercise

1. Find the value of

(a) $\cot 300^\circ$

(b) $\tan 330^\circ$

(c) $\cos(-60)^\circ$

(d) $\sin(-150)^\circ$

(e) $\cos(-120)^\circ$

A. $-\frac{1}{\sqrt{3}}, -\frac{1}{\sqrt{3}}, -\frac{1}{2}, -\frac{1}{2}, -\frac{1}{2}$

B. $-\frac{1}{\sqrt{3}}, -\frac{1}{\sqrt{3}}, -\frac{1}{2}, \frac{1}{2}, \frac{1}{2}$

C. $-1/\sqrt{3}, 1/\sqrt{3}, -\frac{1}{2}, -\frac{1}{2}, -\frac{1}{2}$

D. $-\frac{1}{\sqrt{3}}, \frac{1}{\sqrt{3}}, -\frac{1}{2}, -\frac{1}{2}, -\frac{1}{\sqrt{3}}$

Answer: A



Watch Video Solution

2. Find the value of



Watch Video Solution

3. Differentiate the following functions with respect to x

$$x^4 + 3x^2 - 2x$$

A. $4x^3 + 6x - 2$

B. $4x^3 + x - 2$

C. $x^3 + 6x - 2$

D. $4x^3 + 6$

Answer: A



Watch Video Solution

4. Integrate the following functions with respect to t



Watch Video Solution

5. Integrate the following function

$$\int_0^2 2t dt$$

A. 4

B. 2

C. 3

D. 1

Answer: A



Watch Video Solution

6. Find maximum/maximum value of y in the functions given below

(a) $y = 5 - (x - 1)^2$ (b) $y = 4x^2 - 4x + 7$

(c) $y = x^3 - 3x$

$y = x^3 - 6x^2 + 9x + 15$

(e) $y = (\sin 2x - x)$, where $-\frac{\pi}{2} \leq x \leq \frac{\pi}{2}$



Watch Video Solution

7. What is the slope of following lines graphs

(a) $y = 4x$

A. 4

B. 14

C. -4

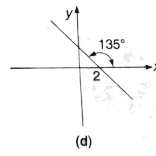
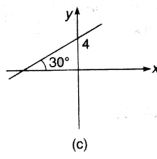
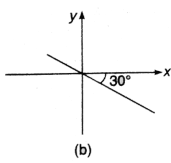
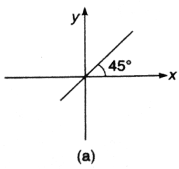
D. 2

Answer: A



Watch Video Solution

8. For the graphs given below, write down their $x - y$ equations



Watch Video Solution

9. For the equations given below, tell the nature of graphs.

(a) $y = 2x^2$ (b) $y = -4x^2 + 6$

(c) $y = 6^{-4x}$ (d) $y = 4(1 - e^{-2x})$

(e) $y = \frac{4}{x}$ (f) $y = -\frac{2}{x}$



Watch Video Solution

10. Value of y decreases exponentially from $y = 10$ to $y = 6$. plot $ax - y$ graph.



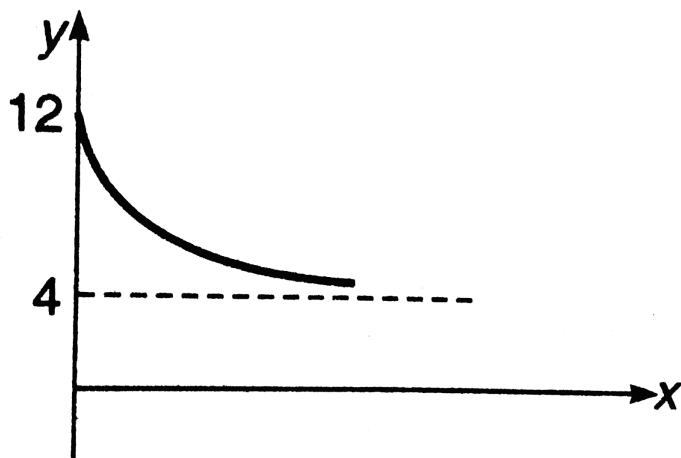
Watch Video Solution

11. Value of y increases exponentially from $y = -4$ to $y = +4$. Plot $ax - y$ graph.



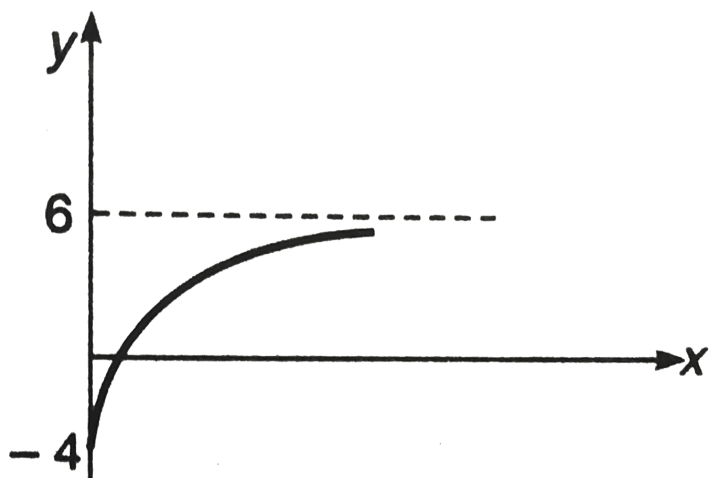
Watch Video Solution

12. The graph shown in figure is exponential. Write down the equation corresponding to the graph.



[Watch Video Solution](#)

13. The graph shows in figure is exponential.
Write down the equation corresponding to
the graph.



[Watch Video Solution](#)