

1. Find the derivative of $f(x) = \sin(x^2)$.

- a) $-\sin(x^2)$
- b) $2x\cos(x^2)$
- c) $-2x\cos(x^2)$
- d) $-2x\sin(x^2)$

2. What is derivative of x^n ?

- a) n
- b) nx^n
- c) nx^{n-1}
- d) nx^{n-2}

3. Find derivative of $\tan(x+4)$.

- a) $\sec^2(x+4)$
- b) $4 \sec^2(x+4)$
- c) $4x \sec^2(x+4)$
- d) $\sec^2(x)$

4. What is value of dy/dx if $x-y = 1$?

- a) 1
- b) 2
- c) -1
- d) 2

5. Value after differentiating $\cos(\sin x)$ is _____

- a) $\sin(\sin x) \cdot \cos x$
- b) $-\sin(\sin x) \cdot \cos x$
- c) $\sin(\sin x)$
- d) $\sin(\cos x) \cdot \cos x$

6. Differentiate $8e^{-x} + 2e^x$ w.r.t x .

- a) $2e^{-x} + 8e^x$
- b) $2e^x + 8e^{-x}$
- c) $2e^{-x} - 8e^x$
- d) $2e^x - 8e^{-x}$

7. Differentiate $8e^{\cos 2x}$ w.r.t x .

- a) $16 \sin 2x e^{\cos 2x}$
- b) $-16 \sin 2x e^{\cos 2x}$
- c) $-16 \sin 2x e^{-\cos 2x}$
- d) $16 \sin 2x e^{-\cos 2x}$

8. Differentiate $3 \sin^{-1}(e^{2x})$ w.r.t x .

- a) $\frac{6e^{2x}}{\sqrt{1-e^{4x}}}$
- b) $\frac{2e^{2x}}{\sqrt{1-e^{4x}}}$
- c) $-\frac{6e^{2x}}{\sqrt{1-e^{4x}}}$
- d) $\frac{6e^{-2x}}{\sqrt{1-e^{4x}}}$

9. Differentiate $\log_5(\log_5 x^5)$ w.r.t x .

- a) $-5/x \log_5 5$
- b) $1/\log_5 5$
- c) $5/x \log_5 5$
- d) $-1/x \log_5 5$

10. Differentiate $3e^{3x^3}$ w.r.t x .

- a) $27x^{-2} e^{3x^3}$
- b) $27x^2 e^{3x^3}$
- c) $-27x^2 e^{3x^3}$
- d) $-27x^{-2} e^{3x^3}$

11. Differentiate $5e^{x^2} \tan x$ w.r.t x .

- a) $5e^{x^2} (1+\tan x)^2$
- b) $-5e^{x^2} (1+\tan x)^2$
- c) $5e^{x^2} (1-\tan x)^2$
- d) $-5e^{x^2} (1-\tan x)^2$

View Answer

12. Differentiate $\log(e^{5x^3})$ w.r.t x .

- a) $-15x^2 e^{5x^3}$
- b) $15x^2 e^{5x^3}$
- c) $15x^2$
- d) $-15x^2$

13. Find dy/dx , if $x=3a^2 \cos^2\theta$ and $y=4a \sin^2\theta$.

- a) $\frac{3}{4a}$
- b) $-\frac{4}{3a}$
- c) $\frac{4}{3a}$
- d) $-\frac{3}{4a}$

14. 2. Find dy/dx , if $x=9t^4$ and $y=t$.

- a) $1/36t^3$
- b) $1/36t^2$
- c) $-1/36t^3$
- d) $1/32t^3$

15. . Find dy/dx , if $x=\sin 3t$ and $y=t^2 \tan 2t$.

- a) $\frac{3t(\tan 2t + t \sec^2 2t)}{4 \cos 3t}$
- b) $\frac{(\tan 2t + t \sec^2 2t)}{3 \cos 3t}$
- c) $\frac{-2t(\tan 2t + t \sec^2 2t)}{3 \cos 3t}$
- d) $\frac{2t(\tan 2t + t \sec^2 2t)}{3 \cos 3t}$

16. 4. Find dy/dx , if $x=\log t^2$ and $y=1t$.

- a) $1/2t$
- b) $-t/2$
- c) $-1/2t$
- d) $t/2$

17. Find dy/dx , if $x=2t^2$ and $y=6t^6$.

- a) $-9t^4$
- b) $9t^4$
- c) t^4
- d) $9t^3$

18. Find dy/dx , if $x=2e^t$ and $y=\log_{10} t$

- a) $1/2te^t$
- b) $-1/2te^t$
- c) $1/te^t$
- d) $1/e^t$

19. Find dy/dx , if $x = \tan 2\theta$ and $y = \cos 2\theta + \sin 2\theta$.

a) $-\frac{\tan^2 2\theta \sin 2\theta}{2}$

b) $\frac{3\tan^2 2\theta \sin 2\theta}{2}$

c) 0

d) $\frac{\tan^2 2\theta \sin 2\theta}{2}$

20. Find dy/dx , if $x = \log(\tan t)$ and $y = \log(\sin t)$.

a) $2 \cos^2 t$

b) $\cos^2 2t$

c) $\cos^2 t$

d) $-\cos^2 t$

ANSWERS-1.(B) 2.(C) 3.(A) 4.(A) 5.(B) 6.(D) 7.(B) 8.(A) 9.(C) 10.(B)

11.(A) 12.(C) 13.(B) 14.(A) 15.(D) 16.(C) 17.(B) 18.(A) 19.(A) 20.(C)