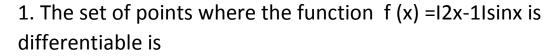
CH:-DERIVATIVES(BASIC) CLASS XII WORKSHEET

Choose the most appropriate options for the following questions.



(a)R

(b)R-
$$(\frac{1}{2})$$

(c)(0,1)

(d)None of these

2. The double differentiation of y wrt x where x=a(cost+tsint) and y=a(sint-cost) is

(a)sec³t/at

(b)cosect

(c)asint

(d)acost+sint

3. The derivative of x^{-8}

 $(a)-8x^{-9}$

(b)- $8x^{-7}$

(c)8x⁸

 $(d)9x^{8}$

4. The derivative of the function f(x) = x(x-10) is

$$(a)x^2-10$$

$$(c)2x^2+0$$

$$(d)x^2-10x$$

5. Differentiating sec(2x+3)

wrt x we get

(a)
$$sec(2x+3) + tan(2x+3)$$

(b)
$$sec^{2}(2x+3)$$

$$(c)$$
2sec $(2x+3)$ tan $(2x+3)$

(d)none of these

6. Which of the following function has its value equal to value of its first derivative

- (a)x
- (b)0
- (c)e^x

(d)Both c and d

7. dy/dx of log x

$$(a)^{\frac{1}{x}}$$

$$(b)x^{-logx}$$

$$(c)x^2$$

- (d)logx
- 8. The function $f(x)=e^{|x|}$ is not differentiable at x=
- (a)0
- (b)1
- (c)-1
- (d)none
- 9. The derivative of $\cos^{-1}(2x^2-1)$ w.r.t x $\cos^{-1}x$ is
- (a) 2
- (b) $\frac{1}{2\sqrt{1-x^2}}$
- (c)2/x
- (d) $1 x^2$
- 10. If $x=a(\phi+\sin\phi)$, $y=a(1-\cos\phi)$, $at\phi=\frac{\pi}{2}$
- (a) 0
- (b) $\sqrt{3}$
- (c) $1/\sqrt{3}$
- (d) 1

Fill in the blanks:-

- 11. For the curve $\sqrt{x} + \sqrt{y} = 1$, $\frac{dy}{dx}$ at $(\frac{1}{4}, \frac{1}{4})$ is......
- 12.If f(x)= Icosx-sinxI ,then $\frac{dy}{dx}$ at x= $\pi/3$
- 13. Derivative of x² wrt x³ is......

- 14. Trigonometric and inverse trigonometric functions are differentiable in their respective
- 15. The function f(x)=cotx is discontinuous at.....

Find the derivative of following functions w.r.t x.

- 16. asinx+bcosx

- 17. $x/\sin x$ 18. $\tan^{-1}1+x^2$ 19. $14x^{10}+5x^6+29$
- 20. cotx+sinx²
- 21. 10√x+12
- $22.\sqrt[3]{5x} + 9$
- 23.cosec $\sqrt[4]{x}$
- 24.sinx*cosx+tanx*sec
- $25.\cos^{-1}1+x^2+x$
- 26.tanx/cosecx
- 27.4xcosecx+9x⁵+77cotx

Answer the following:-

- 28. Find the slope to the tangent to the curve $y=3x^4-4x$ at x=4.
- 29. Differentiate sinx²w.r.t x².
- 30. Differentiate $\sqrt{tan\sqrt{x}}$ w.r.t x.