Chapter 05.
APPLICATIONS OF DIFFERENTIAL CALCULUS

1) Slope of the curve $y = x^2+3x-1$ is _____.

A) $2x+3$
B) x^2+3x
C) $-x^2+3x$
D) x^3+3x^2-x

Answer: A

2) Let s =f(t), the $\frac{d^2s}{dt^2}$ is the _____ at time t.

A) speed
B) acceleration
C) magnitude
D) none of these

Answer: B

3) To obtain the extreme values, we must first find values of x for which _____.

A) f '(x) = f(x)
B) f '(x) = f(a)
C) f ' (x) = 1
D) f ' (x) = 0

Answer: D

4) The values of x obtained by taking f'(x) =0 are called _____ number(s).

A) stationary
B) critical
C) both B and C
D) none of these

Answer: C

5) Those critical or stationary numbers which satisfy second order derivative test are called _____ point.

A) extreme
B) satisfied
C) parallel
D) perpendicular

Answer: A

6) It is _____ happen that critical or stationary numbers are equal to extreme values.

A) never
B) not necessary to
C) always
D) none of these

Answer: B

7) Extreme value of $\frac{x}{lnx}$ is _____.

A) $\frac{1}{e}$
B) does not exist
C) 1
D) e

Answer: D

8) The value of x for which the gradient of $y=x^2 + 2$ becomes equal to 4.

A) 2
B) 4
C) 6
D) 9

Answer: A

9) $\sqrt{x+\Delta x}$ can be approximated to _____.

A) $\sqrt{x} - \frac{1}{2\sqrt{x}}\Delta x$
B) $\sqrt{x} + \frac{1}{\sqrt{x}}\Delta x$
C) $\sqrt{x} + \frac{1}{2\sqrt{x}}\Delta x$
D) None of these

Answer: C

10) If the radius of the sphere is increases by 0.2% then the volume increases by about _____.

A) 0.2%
B) 0.6%
C) 0.3%
D) 0.5%

Answer: B