11. If $f(x) = \frac{\ln x}{x}$ for $x > 0$, which of the following is true?

(A) f is increasing for all x greater than 0.

(B) f is increasing for all x greater than 1.

(C) f is decreasing for all x between 0 and 1.

(D) f is decreasing for all x between 1 and e.

(E) f is decreasing for all x greater than e.

28. The graph of the function $f(x) = 2x^{5/3} - 5x^{2/3}$ is increasing on which of the following intervals.

I. $1 < x$ II. $0 < x < 1$ III. $x < 0$

(A) I only (B) II only (C) III only (D) I and II only (E) I and III only

23. Let f be the function defined by $f(x) = x^{2/3}(5 - 2x)$. f is increasing on the interval

(A) $x < -\frac{5}{2}$ (B) $x > 0$ (C) $x < 1$ (D) $0 < x < \frac{5}{8}$ (E) $0 < x < 1$

15. At $x = 0$, which of the following is true of the function f defined by $f(x) = \frac{x^2}{1+\sin x} + e^{-2x}$?

(A) f is discontinous

(B) f is increasing

(C) f is decreasing

(D) f has a relative minimum

(E) f has a relative maximum

Ans

1. At $x = 0$ which of the following is true of the function f defined by $f(x) = x^2 + e^{\sin x}$?

(A) f is increasing.
(B) f is decreasing.
(C) f is discontinuous.
(D) f has a local minimum.
(E) f has a local maximum.

Ans