LAKSHYA (JEE)

Relations and Functions

DPP-06

1. If 4[x] = [x + 3], then find x

2. Domain of $f(x) = \log|\log x|$ is

(A) $(0, \infty)$ (B) $(1, \infty)$

(C) $(0,1) \cup (1, \infty)$ (D) $(-\infty, 1)$

3. The domain of the function $f(x) = \log(\sqrt{x-4} + \sqrt{6-x})$ is

(A) $[4, \infty)$ (B) $(-\infty, 6]$

(C) [4, 6] (D) None of these

4. Domain of the function $f(x) = \dfrac{x-3}{(x-1)\sqrt{x^2-4}}$ is

(A) (1, 2)

(B) $(-\infty, -2) \cup (2, \infty)$

(C) $(-\infty, -2) \cup (1, \infty)$

(D) $(-\infty, \infty) - \{1, \pm 2\}$

5. If $f(x) = \cos[\pi^2]x + \cos[-\pi^2]x$, then

(A) $f\left(\dfrac{\pi}{4}\right) = 2$ (B) $f(-\pi) = 2$

(C) $f(\pi) = 1$ (D) $f\left(\dfrac{\pi}{2}\right) = -1$

6. Domain of the function f defined $f(x) = \sqrt{x-1}$ by is given by

(A) (1, ∞) (B) [1, ∞)

(C) [–1, ∞) (D) (–1, ∞)

7. Domain of function defined by $f(x) = \dfrac{x^2 + 2x + 1}{x^2 - x - 6}$ is given by

(A) R –{3, –2} (B) R –{–3, 2}

(C) R –[3, –2] (D) R –(3, 2)

8. Domain of function f given by f(x) = 2 –|x – 5| is

(A) R^+ (B) R –{5}

(C) R –{–5} (D) R

9. The domain of $f(x) = \dfrac{\log_2(x+3)}{x^2 + 3x + 2}$ is

(A) R –{–1, –2}

(B) (–2, ∞)

(C) R –{–1, 2, –3}

(D) (–3, + ∞) –{–1, –2}

10. $\left[\dfrac{4}{5}\right] + \left[\dfrac{4}{5} + \dfrac{1}{1000}\right] + \left[\dfrac{4}{5} + \dfrac{2}{1000}\right] + \ldots + \left[\dfrac{4}{5} + \dfrac{999}{1000}\right]$

where [.] denotes greatest integer function

(A) 998 (B) 980

(C) 800 (D) 801

ANSWERS

1. $x \in [1, 2)$
2. (C)
3. (C)
4. (B)
5. (D)
6. (B)
7. (A)
8. (D)
9. (D)
10. (C)

Note - If you have any query/issue

Mail us at support@physicswallah.org