Calculus 1

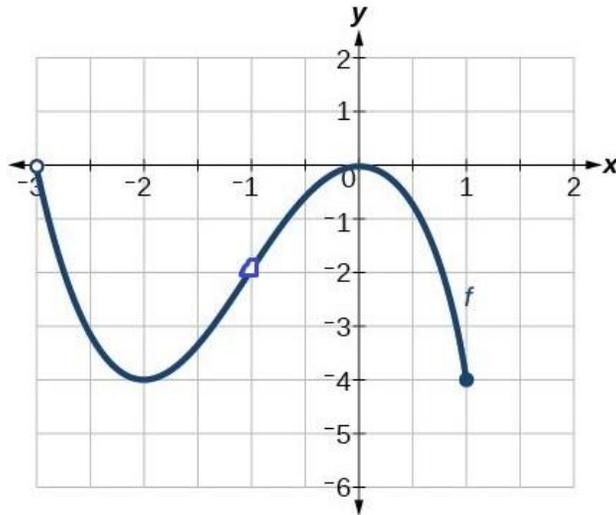**Q) Choose the correct answer :**

* Using the given graph of $f(x)$, solve parts 1- 2

1) **Domain $f(x) =$**

   a) $[-3, 1]$ b) $(-3, 1]$ c) $(-3, 1) - \{-1\}$ d) $(-3, 1] - \{-1\}$

2) **Range $f(x) =$**

   a) $[-4, 0)$ b) $(-4, 0]$ c) $[-4, 0]$ d) $(-3, 1]$

3) **The function $f(x) = \dfrac{x^5 \, |x|}{x^4 - 3}$ is**

   a) Even function   **b) Odd function**   **c) Neither even nor odd**

4) **The graph of $\sqrt{x + 2} - 3$ is obtained from the graph of $\sqrt{x}$ by**

   a) Shifting 2 units right and 3 units up

   b) Shifting 2 units right and 3 units down

   c) Shifting 2 units left and 3 units up

   d) Shifting 2 units left and 3 units down

5) The graph of $f(x) = (x+3)^2 - 5$ may be obtained by shifting the graph of $g(x) = x^2$

   a) 3 units left and 5 units up
   b) 3 units right and 5 units down
   c) 3 units left and 5 units down
   d) 3 units right and 5 units up

6) The range of $f(x) = x^2 + 6x + 16$ is

   a) $[7, \infty)$ b) $[2, \infty)$ c) $(-\infty, 4]$ d) $(-\infty, 6]$

7) The range of $f(x) = x^2 + 10x + 32$ is

   b) $[-5, \infty)$ b) $[7, \infty)$ c) $(-\infty, 4]$ d) $(-\infty, 6]$

8) If $f(x)$ is even function , $g(x)$ is odd function and $f(-5) = 6$, $g(-5) = -3$, then $f(5) + g(5) = $

   a) 3   b) 9   c) -9 d) -3

9) The range of $f(x) = x^2 + 3$ is

   a) $(3, \infty)$ b) $[3, \infty)$ c) $(-\infty, 3]$ d) $(-\infty, 3)$

10) The solution of this equation $| 2x - 3| - 2 = 3$ are

   a) $\{-4, 4\}$ b) $\{-4, 3\}$ c) $\{-1, 4\}$ d) $\{-1, 3\}$

11) The domain of the function $f(x) = \frac{1}{|2x-3|-9}$ is

   a) $R - \{6, -3\}$ b) $R - \{-6, 3\}$ c) $R - \{6, 3\}$ d) $R - \{-6, -3\}$

12) The domain of the function $f(x) = \sqrt{6 - |2x|}$ is

   a) $[-3, 3]$ b) $(-3, 3)$ c) $[3, \infty)$ d)$(-\infty, -3], [3, \infty)$

13) The domain of $f(x) = \sqrt{|x| - 3}$ is

   a) $(-\infty, -3], [3, \infty)$ b) $[-3, 3]$ c) $[3, \infty)$ d) $(-3, 3)$

14) The domain of $f(x) = \frac{8}{(x+4)(x-9)}$ is

   a) $R - \{4, -9\}$ b) $R - \{-4, -9\}$ c) $R - \{-4, 9\}$ d) $R - \{-4, -9\}$

15) The domain of $f(x) = \frac{1}{x^3 - 16x}$ is

   a) $R - \{-4, 4\}$ b) $R - \{0, 4\}$ c) $R - \{-4, 0, 4\}$

16) The domain of $f(x) = x^3 + 4x^{-2} + 5x - 1$ is

   a) R b) $R - \{0, 1\}$ c) $(0, \infty)$ d) $R - \{0\}$

17) If $g(x) = \frac{f(x) + f(-x)}{2}$, $h(x) = \frac{f(x) - f(-x)}{2}$, where f has domain of all real numbers, then

   a) g is odd and h is even function   c) g is even and h is odd function
   b) g and h are even functions   d) g and h are odd functions

18) One of the following functions is Neither even nor odd

   a) $f(x) = x^2 - 3$ b) $f(x) = x^3 |x| + x$ c) $f(x) = x^3 - x^8$

19) Suppose that the graph of f is given . Then the graph of $y = f(x - 2) - 2$ is obtained by shifting the graph of f

   a) 2 units right then 2 units up   c) 2 units left then 2 units up

   b) 2 units right then 2 units down   d) 2 units left then 2 units down

20) $f(x) = \sqrt{x^2 - 2x - 8}$, then $D_f =$

    a) $(-\infty, -4], [2, \infty)$ **b)** $(-\infty, -2], [4, \infty)$ **c)** $(-\infty, -4), (2, \infty)$

                                     d) $(-\infty, -2), (4, \infty)$

21) $f(x) = \sqrt{\dfrac{x+5}{x^2 - 4x}}$, then $D_f =$

    a) $[-5, 0], [4, \infty)$ **b)** $[0, 4]$

    c) $[-5, 0), [4, \infty)$ **d)** $[-5, 0), (4, \infty)$

22) A function $f(x)$ is an even function , If $f(4) = 2$, which other point must be on the graph of $f(x)$?

    a) $(4, -2)$ **b)** $(-4, 2)$ **c)** $(-4, -2)$ **d)** $(-2, -4)$

23) Determine if the function is even, odd , or neither $f(x) = -2x^2 + 1$

    a) Even   **b) Odd**   **c) Neither**

24) Determine if the function is even, odd , or neither $f(x) = 3x^5 - 4x + 1$

    a) Even   **b) Odd**   **c) Neither**

25) Determine if the function is even, odd , or neither $f(x) = (x - 1)^3 + 2x$

    a) Even   **b) Odd**   **c) Neither**

Good Luck
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