

1) $\sin^2(x + \frac{\pi}{2}) = 1$ $[-1, 1]$ $-1 \leq \sin x \leq 1 \rightarrow 0 \leq \sin^2 x \leq 1 \Rightarrow -1, 1$ (1)

2) $\cos^2 x = 0$ $[-1, 1]$ (2)

3) $\frac{x}{|x|} + [x] = [-1, 1]$ $(-1, -)$ $-1 - x = -1$
 $(-1, -1)$ $-1 - x = -1$
 $(-1, 0)$ $-1 - x = -1$
 $(0, 1)$ $-1 - x = -1$ (3)

4) $\frac{x+1}{x+10}$ $x=0 \rightarrow y=\frac{1}{10}$
 $y=0 \rightarrow x=-10$ (4)

5) $|x-1| + |y-1| = 2$ (5)

6) $y = x + \frac{1}{x} + \sqrt{x + \frac{1}{x}}$ $x \rightarrow \frac{1}{x} + \sqrt{x + \frac{1}{x}}$ $(-\infty, -1]$ $(x, +\infty)$ $(x, +\infty)$ (6)

7) $y = (1 - \sin x)(1 + \sin x) = 1 - \sin^2 x = \cos^2 x$ $[-1, 1]$ (7)

8) $f(x) = \frac{1}{x} - 1$ $D_f = \{1, 2, 3, \dots, 9\}$ $x_1 \rightarrow \frac{1}{1} - 1 = 0$ $x_2 \rightarrow \frac{1}{2} - 1 = -\frac{1}{2}$ $x_3 \rightarrow \frac{1}{3} - 1 = -\frac{2}{3}$ $x_4 \rightarrow \frac{1}{4} - 1 = -\frac{3}{4}$ $x_5 \rightarrow \frac{1}{5} - 1 = -\frac{4}{5}$ $x_6 \rightarrow \frac{1}{6} - 1 = -\frac{5}{6}$ $x_7 \rightarrow \frac{1}{7} - 1 = -\frac{6}{7}$ $x_8 \rightarrow \frac{1}{8} - 1 = -\frac{7}{8}$ $x_9 \rightarrow \frac{1}{9} - 1 = -\frac{8}{9}$ (8)

9) $\sqrt{ax^2 + bx + c}$ $D_f = [x, +\infty)$ $f(x) = 1$ $g(x) = \sqrt{bx + c}$ $[a=0]$ $x \rightarrow \frac{1}{x} + \sqrt{x + \frac{1}{x}}$ $[b=1]$ $[c=-1]$ (9)

10) $g(x) = \sqrt{x^2 + 1}$ $R_2 = [x, +\infty)$ (10)

Subject:

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$\int_{n-r}^n \frac{1}{n-r} \cdot dn$ $D_f = R - \{a, b\}$ $R_f = [(c, +\infty) - \{1\}]$ (A)

$\downarrow$ $\downarrow$

$\frac{(n+r)(n^r \cdot r n)}{n-r} = n^r - r n$ $y_3 = -1 = c$ $n^r - r n = 1$

$\begin{cases} n = -r \Leftarrow a \\ n = r \Leftarrow b \end{cases}$

$\int (-1) = (+r)^*$

$\int_a^b \frac{1}{n-r} \cdot dn = \ln \frac{b-r}{a-r}$ $D_f = [a, b]$ $R_f = ?$ (4)

$(n-r)^n \rightarrow n^r - 1 = \frac{1}{n-r} \cdot r n$ $a = -4$ $b = 12$

$y = n-r$ $\frac{1}{12} \downarrow \frac{1}{10}$

$R_f = [-1, 10]$

$y = [n] + [n + \frac{1}{r}]$ $(\frac{1}{r}, r)$

$(\frac{1}{r}, 1) \rightarrow 1$ $(1, \frac{r}{r}) \rightarrow r$ $(\frac{r}{r}, r) \rightarrow r$

