

الف

ب

بسط ١٢ - ٥, ٥, ٦, ٧, ٨, ٩, ١٠, ١١, ١٢

$$f(x) = x^r + 4x^r - 4x^r + m x^r + r x + 1 + 1 \rightarrow \frac{mn \cdot n x^r}{m = -1, n = 4} \rightarrow x^r - 4x^r + r \cdot m x^r + m x^r + m n$$

-1

$$f(x) = 3x$$

$$g(x) = m \cdot n + x + p \quad m = -1 \rightarrow p + 1 = -1 \rightarrow p = -2$$

$$p + x = -1 \rightarrow x = -1 \rightarrow -1 + 4 = 3 = 3$$

$$\frac{x - 2}{x^2 - 2x - 1} \rightarrow \frac{x - 2}{(x^2 - 4)(x^2 + 1)} \rightarrow \frac{-2}{-4} + \frac{2}{4} + \frac{1}{x^2 + 1} \rightarrow \frac{1}{2} + \frac{1}{2} + \frac{1}{x^2 + 1} \rightarrow \frac{1}{2} + \frac{1}{2} + \frac{1}{x^2 + 1}$$

الف - ٢

$$\frac{2x^2 + 1}{x^2 - 2x - 1} = x - 2 \rightarrow x \neq -1 \rightarrow x \neq -1 \rightarrow x \neq -1 \rightarrow x \neq -1$$

ب

$$f(x) = \frac{\sqrt{x(x^2 - 1)}}{\sqrt{|x| + x}} \rightarrow x(x^2 - 1) \geq 0 \rightarrow \frac{-1}{-1} + \frac{1}{-1} + \frac{1}{-1} \rightarrow \frac{-1}{-1} + \frac{1}{-1} + \frac{1}{-1}$$

الف - ٣

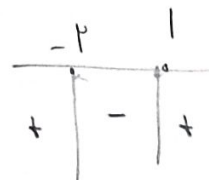
$$|x| + x \geq 0 \rightarrow x \geq 0 \rightarrow x \geq 0 \rightarrow x \geq 0 \rightarrow x \geq 0$$

$$f(x) = \frac{\sqrt{|x - 2| - x^2}}{|x| - 1} \rightarrow |x| \neq 1 \rightarrow x \neq \pm 1$$

ب

$$|x - 2| - x^2 \geq 0 \rightarrow \begin{cases} \text{موجب} : x - 2 \geq x^2 \\ \text{منفي} : x - 2 \leq x^2 \end{cases} \rightarrow x^2 - x + 2 \geq 0 \rightarrow x^2 + x - 2 \rightarrow (x + 2)(x - 1)$$

$$Df = [-2, 1) \cup \{1\}$$



نفس التالي قبل

$$|q-r|-1=k$$

← 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100

$$|q-r|-1=k \rightarrow |q-r| \geq k+1 \rightarrow \begin{cases} q-r \geq k+1 \\ q-r \leq -k-1 \end{cases}$$

$$q \geq k+1 \vee q \leq -k$$

$$|q-r|-1=k \rightarrow |q-r| \leq 1-k \rightarrow q-r=1-k$$

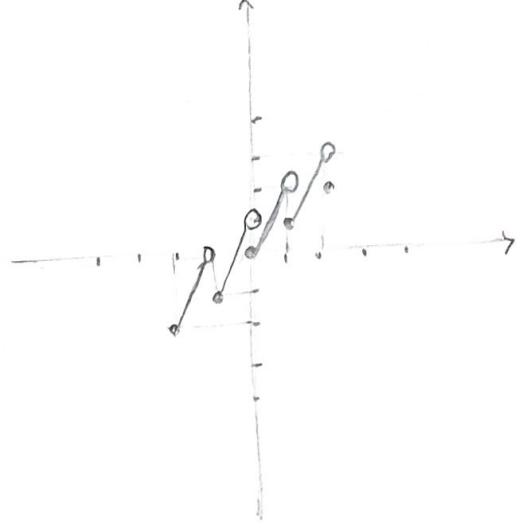
$$q-r \geq k+1 \rightarrow q \geq k+1 \vee q \leq -k$$

$$k \leq q-r \leq 1-k \rightarrow q-r=1-k$$

$$|q-r| \geq k+1 \rightarrow k \leq r$$

$$P_1 = \{(-1, 0), (-1, 1), (0, 2), (1, 3), \{2\}\}$$

$$P_2 = \{(-1, -1), (-1, 0), (0, 1), (1, 2), \{2\}\}$$



$$\frac{q^2 - 5q + 3}{q+1} \rightarrow b=q \rightarrow \frac{(q-1)(q-3)}{q+1}, b=q$$

$$A_{a=-1} \rightarrow q=3, b=q \rightarrow b=3, a=b-5$$

$$A_{a=3, q=1+b} \rightarrow b=1 \rightarrow a=b-5 \rightarrow -5+(-5)=-10 \rightarrow a-b$$

$$\frac{(q^2 + 4q + 4)(q-1)}{(q-1)(q-2)} \rightarrow \frac{(q+1)(q+2)}{q-1}, q+2 \rightarrow g(q) \rightarrow C=2$$

$$A_{q=1} \rightarrow \frac{a+2}{kb} \rightarrow a+2=kb \rightarrow A_{q=1} \rightarrow \frac{-a+2}{-1+b} \rightarrow a+2=1+b$$

$$a+2=b \rightarrow b=\frac{1}{2} \rightarrow \frac{1}{2} \neq \frac{1}{2}$$

$$Df = f'x = f'a \rightarrow f'x \leq f'a \rightarrow x \leq \frac{f'}{f}a$$

$$Dg = b - f'x \rightarrow x \leq \frac{b}{f} \quad \frac{b}{f} > 1, \frac{f'a}{f} > 1 \rightarrow a \leq \frac{f'}{f}b = f$$

$$f'x - f' = f'a = x \rightarrow x = -1 \rightarrow f' = \frac{f}{x} = \frac{f}{-1} = -f$$

$$g(x) = \sqrt{f'x + f}, L(x) = \sqrt{m - x} + n$$

$$D_{L,g} = [-1, 0] \rightarrow D_f \cap D_{L,g} = [-1, 0] \rightarrow f'x + f \leq 0 \rightarrow x \leq -1 \quad m - x \leq 0 \rightarrow m \leq x$$

$$m \leq 0 \quad L - g(x) = \sqrt{f'x + f} - \sqrt{m - x} \rightarrow \sqrt{f'x + f} \leq \sqrt{m - x} \rightarrow f'x + f \leq m - x$$

$$\Rightarrow m + n \leq 0 + n\sqrt{f'x + f} = n\sqrt{f'x + f}$$

$$y = (-1)^x (x - L(x)) = \frac{1}{x} \rightarrow x - L(x) = \frac{1}{x}$$

$$y = \frac{1}{x}$$

$$x - L(x)$$

