

$$y = \sqrt{mf(m)}$$

$$mf(m) \geq 0$$

→ علامت m و $f(m)$

$$m_{\text{منفی}} = [-\infty, 0]$$

$$m_{\text{مثبت}} = [2, \infty] \rightarrow \text{دامنه} = [-\infty, 0] \cup [2, \infty]$$

$$\sqrt{\frac{-m}{f(m)}} \geq 0$$

$$\frac{-m}{f(m)} \geq 0$$

م m منفی
مثبت $f(m)$

مثبت m و $f(m)$

$$\text{دامنه} = (-\infty, 0) \cup (0, 2)$$

مثبت $f(m)$

م m منفی

$$f(m) - 2f(2) = m^2 - 3m + 4$$

$$f(2) = ? \rightarrow f(m) - 2f(2) = m^2 - 3m + 4 \rightarrow -f(2) = 2$$

$$f(2) = -2$$

$$f(-2) = ? \quad f(-2) - 2f(2) = (-2)^2 - 3(-2) + 4$$

$$f(-2) + 4 = 14 \rightarrow \boxed{f(-2) = 10}$$

$$f(m) = \begin{cases} \textcircled{1} m - \sqrt{m+4} & m > 3 \\ \textcircled{2} \sqrt{m+4} & m \leq 3 \end{cases}$$

$$\textcircled{1} = f(\omega) = \omega - \sqrt{\omega+4} = 2$$

$$\textcircled{2} = f(f(\omega)) = f(2)$$

$$f(2) = 2(2) + 3 = 7$$

$$\textcircled{2} = f(1) = 2(1) + 3 = 5$$

$$f(f(1)) = f(5)$$

$$f(5) = 2$$

$$\Rightarrow f(f(\omega)) + f(f(1)) = 7 + 2 = \boxed{9}$$



$$f(n) = an^2 - bn + c$$

$$f(n-1) - f(n) = 4n + 2$$

$$f(n-1) = ? \rightarrow f(n-1) = a(n-1)^2 - b(n-1) + c = an^2 - 2an + a - bn + b + c$$

$$f(n-1) - f(n) = -2an + a + b = 4n + 2$$

$$-2a = 4$$

$$a = -2$$

$$a + b = 2$$

$$-2 + b = 2$$

$$b = 4$$

$$\Rightarrow a - b = -2 - 4 = -6$$

$$f(n) = an^2 - 2n + 1$$

$$4f(3) + f(-1)$$

$$f'(2)$$

$$f(3) = 3^2 - 2(3) + 1 = 9 - 6 + 1 = 4$$

$$f(-1) = (-1)^2 - 2(-1) + 1 = 1 + 2 + 1 = 4$$

$$f(2) = 2^2 - 2(2) + 1 = 4 - 4 + 1 = 1$$

$$f'(2) = (-1)^2 = 1$$

$$\text{جواب: } \rightarrow \frac{4(4) + 4}{1} = 20$$

$$f(n) = \begin{cases} 2n+1 & n \geq 2 \\ n^2 & n < 2 \end{cases}$$

$$\frac{2f(1) - 2f(-2)}{f(2)} = ?$$

$$① f(1) = 2(1) + 1 = 3$$

$$② f(-2) = 4$$

$$③ f(2) = 4 + 1 = 5$$

$$\text{جواب: } = \frac{2(3) - 2(4)}{5} = \frac{6 - 8}{5} = -\frac{2}{5}$$

$$f = \{(1, 4), (2, 2), (3, 1), (4, 1)\}$$

$$\frac{f(f(f)) - f(f(2))}{f(1) - 2} = ?$$

$$f(2) = 1$$

$$f(f(f)) = f(1) = 4$$

$$f(3) = 2$$

$$f(f(3)) = f(2) = 1$$

$$f(1) - 2 = 4 - 2 = 2$$

$$\frac{4 - 1}{2} = \frac{3}{2}$$

$$f(m) = \frac{m^p + m + 9}{m^p + m + 9}$$

$$m^p + m = (\sqrt{p} - p)^p + p(\sqrt{p} - p) = -1 \quad -9$$

$$\frac{-1+9}{-1+9} = \frac{-1}{-1} = 1$$

$$f(f(\sqrt{p}-p)) = f(p) \rightarrow \frac{p+1+9}{p+1+9} \quad \boxed{\frac{p}{1p}}$$

$$f(\sqrt{m}) = (\sqrt{m})^p + \frac{1}{(\sqrt{m})^p} \rightarrow f(\sqrt{m}) = m + \frac{1}{m} \quad -10$$

$$(f(\sqrt{m}))^p = m^p + p + \frac{1}{m^p}$$

$$(f(\sqrt{m}))^p - f(m) = (m^p + p + \frac{1}{m^p}) - (m^p + \frac{1}{m^p}) = p$$