

نام و نام خانوادگی: با استفاده از روشی تکلیف شماره کلاس
 $x^r - ax - 24 = (x-9)(x+3)$

الف) $x^r - ax - 9 = 0 \rightarrow x^r - ax - 18 = 0$

ب) $x^r - ax - 18 = 0 \rightarrow (x-18)(x+1) = 0$

$x^r - ax - 9 = 0 \rightarrow (x-9)(x+1) = 0$

ج) $x^r - ax - 18 = 0 \rightarrow (x-18)(x+1) = 0$

د) $x^r - ax - 18 = 0 \rightarrow (x-18)(x+1) = 0$

ه) $x^r - ax - 18 = 0 \rightarrow (x-18)(x+1) = 0$

و) $x^r - ax - 18 = 0 \rightarrow (x-18)(x+1) = 0$

ز) $x^r - ax - 18 = 0 \rightarrow (x-18)(x+1) = 0$

ح) $x^r - ax - 18 = 0 \rightarrow (x-18)(x+1) = 0$

ط) $x^r - ax - 18 = 0 \rightarrow (x-18)(x+1) = 0$

$A \times B = \{(1,1), (1,2), (1,3), (1,4), (1,5)\}$

$B^r = \{(1,1), (1,2), (1,3), (1,4), (1,5)\}$

$A \times B - B^r = \{(1,1), (1,2)\}$

$m^r = m + r$

$m - m - r = 0$

$m^r = m + r \rightarrow m - m - r = 0$

$a^r = a - r \rightarrow a^r - a + r = 0$

$\Delta = 9 - 4(1)(1) = 5$

$a^r + 1 = \frac{r(r-1)}{2}$

$a = 1 \rightarrow (1,1), (1,2), (1,3), (1,4), (1,5)$

$$f(x) = \begin{cases} x^{n-1} & x \leq 1 \\ a x^n + b & 1 < x \leq r \\ a x^n & x > r \end{cases} \quad f(r) = r a + b \quad \text{piecewise} \quad r a + b = n \quad f(r) = r^n = n$$

$$x=1 \quad f(1) = 1^{n-1} = 0 \quad \left. \begin{array}{l} a r b = 0 \\ b = -a \end{array} \right\} \quad \text{و } a, b \rightarrow \quad r a - a = n \Rightarrow \boxed{a = n} \quad \text{و } a r b = n \Rightarrow \boxed{a = n} \quad \boxed{b = -n}$$

$$f(x) = \begin{cases} r x - r^n & x \geq r \\ r x - r^n & x \leq r \end{cases} \quad \text{بنا کنید تا قطع باشد و به هم وصل شود}$$

$$r k - r^n = r - r^n k \quad r k + r^n k = r + r^n \Rightarrow 0 k = 0 \quad k = \frac{r}{0} \quad \text{و}$$

تغییر کافی

$$\text{الف} \quad x^n - r^n = x^n - r^n + r^n = x^n - r^n + r^n \quad \text{ب} \quad x^n - r^n = x^n - r^n + r^n \Rightarrow x^n - r^n = x^n - r^n + r^n$$

$$\text{ج} \quad x^n - r^n = x^n - r^n + r^n = x^n - r^n + r^n \quad \text{و} \quad x^n - r^n = x^n - r^n + r^n \Rightarrow x^n - r^n = x^n - r^n + r^n$$

$$\text{د} \quad x^n - r^n = x^n - r^n + r^n = x^n - r^n + r^n \quad \text{و} \quad x^n - r^n = x^n - r^n + r^n \Rightarrow x^n - r^n = x^n - r^n + r^n$$

$$\text{الف} \quad x^n \sin y = y \sin x \quad \Rightarrow \quad 0 x \sin y = y \sin x \quad \Rightarrow \quad x \sin y = y \sin x$$

$$\text{ب} \quad \sqrt{\frac{x}{y}} + \sqrt{\frac{y}{x}} = 1 \quad \frac{x}{y} > 0 \quad x \neq 0 \quad y \neq 0$$

$$\sqrt{\frac{x}{y}} = a \quad \rightarrow \quad a + \frac{1}{a} = 1$$

$$a^2 + 1 = 1 a \rightarrow a^2 + 1 - 1 a = 0 \quad (a-1)^2 = 0 \Rightarrow a = 1 \Rightarrow \sqrt{\frac{x}{y}} = 1$$

$$x \neq y \quad \text{و} \quad x = y$$

الرسالة ٨ الف ٥

$$y'' - y' = x^2 - 2x + 1$$

$$y'' - y' + 0 = x^2 - 2x + 1$$

$$(y - y')' = (x - 1)' + 1$$

$$y - y' = \pm \sqrt{(x - 1)^2 + 1}$$

بالتعويض المتكرر

$$\Rightarrow y = 1 + \sqrt{(x - 1)^2 + 1}$$

$$y' = 1 - \sqrt{(x - 1)^2 + 1}$$

$$x = 1 \Rightarrow y = 1 \pm \sqrt{1}$$

بذلك نحصل على حلين

الحل ٩

$$y_1'' + y_1' = 0 \quad y_1'' + y_1' = 0$$

$$y_1'' + y_1' = 0 \Rightarrow y_1'' + y_1' = 0$$

$$(y_1 - y_1')(y_1' + y_1 + y_1' + y_1' + 1) + 1(y_1 - y_1') = 0$$

$$(y_1 - y_1')(y_1' + y_1 + y_1' + y_1' + 1) = 0$$

$$\Delta = y_1'' - 1(1)(y_1' + 1) < 0$$

$$y_1'' - y_1' - 1 > 0$$

الحل ١٠

$$\Rightarrow y_1 = y_1' \Rightarrow 0$$

$$\Rightarrow y_1 = y_1'$$

الحل ١١

الف ۱) $4x^2 - 5x - 4 = 0$

$$x^2 - 5x - 34 = 0 \rightarrow (x-9)(x+4) = 0 \rightarrow x_1 = \frac{9}{4} = \frac{3}{2}$$

$$\rightarrow x_2 = \frac{-4}{4} = -\frac{1}{2}$$

الف ۱) $y^3 - 4y = x^2 - 4x + 3 \rightarrow x = 1 \rightarrow y^3 - 4y = 0$

$$y(y^2 - 4) = 0 \rightarrow y = 0 \leq y = \sqrt{4} \leq y = -\sqrt{4}$$

به ازای $x = 1$ ، سه y متفاوت داریم پس تابعیت (در واقع مثلث متساوی الساقین...)