

$$y = a(n-9)^2 - 1 \quad 1 = a(2-9)^2 - 1 \quad 1 = 49a - 1$$

$$2 = 49a \quad a = \frac{1}{18} \quad y = \frac{1}{18}(n-9)^2 - 1$$

$$y = \frac{1}{18}n^2 - n + \frac{5}{4}$$

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$$\Delta = b^2 - 4ac > 0 \quad \frac{-b}{a} > 0 \quad \frac{c}{a} > 0 \quad \Delta = m^2 - f(2)(m+4)$$

$$= m^2 - 8m - 8 > 0 \quad m^2 - 8m - 8 = 0 \rightarrow m = 12, m = -4$$

$$m < -4 \quad \text{و} \quad m > 12 \quad \frac{-m}{9} > 0 \Rightarrow m < 0 \quad \frac{m+4}{9} > 0 \Rightarrow m > -4$$

$$\Rightarrow -4 < m < -4 \rightarrow (-4, -4)$$

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$$s = -\frac{2m-1}{3} \quad p = -\frac{2-m}{3} \quad s = \frac{1}{p} \quad -\frac{2m-1}{3} = \frac{3}{2-m}$$

$$-(2m-1)(2-m) = 9 \quad 2m^2 - 8m + 2 = 9 \quad \Delta = 11 \quad m = \frac{4 \pm \sqrt{11}}{2} \quad m = -1$$

$$(2m-1)^2 - 12(2-m) \geq 0$$

$$m = \frac{4 \pm \sqrt{11}}{2}$$

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$$x^2 - x - 4 = 0 \quad x_1 + x_2 = 1 \quad x_1 x x_2 = -4 \quad x_1^2 + x_2^2 = 13$$

$$\frac{1}{x_1^2} + \frac{1}{x_2^2} = \frac{x_2^2 + x_1^2}{(x_1 x_2)^2} = \frac{13}{(-4)^2} = \frac{13}{16} \quad s = 13 - \frac{13}{16} = \frac{205}{16}$$

$$p = -\frac{214}{32} \quad 1^2 - s + 4p = 0 \quad 1^2 - \frac{205}{16} + 4(-\frac{214}{32}) = 0 \quad 4^2 + \frac{214}{4} + \frac{214}{4} = 0$$

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$$x n^2 - a n + c = 0 \quad n_1 = x n_2 \quad x n^2 - a n + c = 0 \quad n_1 + n_2 = \frac{a}{x}$$

$$n_1 \times n_2 = \frac{c}{x} \quad n_1 + n_2 = x n_2 + n_2 = c n_2 = \frac{a}{x} \Rightarrow a = 12 n_2$$

$$n_1 n_2 = x n_2 \times n_2 = x n_2^2 = \frac{c}{x} \Rightarrow n_2^2 = \frac{c}{x^2} \Rightarrow n_2 = \pm \frac{\sqrt{c}}{x} \quad a = 12 n_2$$

$$\Rightarrow a = 12 \times \frac{\sqrt{c}}{x} = 12 \quad a = 12 n_2 \Rightarrow a = 12 \times \left(-\frac{\sqrt{c}}{x}\right) = -12 \quad |12 - (-12)| = 24$$

$$y = a n^2 + (x + y a) n = n(a n + (x + y a)) = 0 \rightarrow n = 0, a n + (x + y a) = 0$$

$$\Rightarrow n = -\frac{x + y a}{a} \quad (a \neq 0) \quad n = -\frac{x - y a}{a} \quad n = 0 \rightarrow$$

$$n_r = -\frac{b}{x a} = -\frac{x + y a}{x a} \quad -\frac{x + y a}{x a} \geq 0 \Rightarrow x + y a \leq 0 \Rightarrow a \leq -\frac{x}{y}$$

$$-\frac{x + y a}{a} \geq 0 \Rightarrow x + y a \geq 0 \Rightarrow a \geq -\frac{x}{y} \quad \text{حيث } a > 0 \quad x < 0$$

$$a = 0 \rightarrow y = x n \rightarrow -\frac{x}{y} \leq a < 0, a = 0 \vee a \in \left[-\frac{x}{y}, 0\right]$$

$$\text{مثال: } a = 1, b = a \Rightarrow n_1 = -\frac{a}{y} \quad \text{مثال: } a = -1, b = -x \Rightarrow n_1 = -\frac{-x}{1(-1)} = \frac{x}{1}$$

$$1 - \frac{-x}{-1} = 1 \quad -\frac{d}{y} = 1 \Rightarrow d = -y \quad \text{حيث: } 1 = n^2 - y n - x \Rightarrow n^2 - y n - x = 0 \Rightarrow$$

$$n = x \text{ و } n = -1 \quad \text{مثال: } 1 = n^2 - y n + b \Rightarrow n^2 - y n + b - 1 = 0 \Rightarrow n^2 + y n - (b - 1) = 0$$

$$\text{حيث: } n = 1 \text{ و } n = -1 \rightarrow n_1 = x, n_2 = -1 \quad \text{مثال: } y = -9, -9 + b - 1 \rightarrow b = 19$$

$$d = -x \rightarrow a = 1, b = 14 \quad ab = 1 \times 14 = 14$$

$$x n^2 - a n - y = n^2 - a n + b \quad x n^2 - a n - y = n^2 + a n - b = 0 \Rightarrow x^2 - (b + y) = 0$$

$$n^2 = b + y \rightarrow n = \pm \sqrt{b + y} \quad \sqrt{b + y} - (-\sqrt{b + y}) = 2\sqrt{b + y} = \frac{1}{x} \Rightarrow$$

$$b + y = \frac{1}{4} \Rightarrow b = -\frac{98}{14} \quad a = x \quad b = -\frac{98}{14} \quad \frac{ab}{x} = \frac{x \times -\frac{98}{14}}{x} = -\frac{98}{14}$$

$$r^2 + 4r + m = 0 \Rightarrow m = -r^2 - 4r \quad r^2 + 4r - x m = 0 \Rightarrow x m = r^2 + 4r \Rightarrow$$

$$m = \frac{r^2 + 4r}{x} \quad -r^2 - 4r = \frac{r^2 + 4r}{x} \Rightarrow x^2(r^2 + 4r) = r^2 + 4r \Rightarrow$$

$$-x r^2 - 14r = r^2 + 4r \quad -x r^2 - 4r = 0 \Rightarrow r(-x r - 4) = 0 \quad r = 0 \quad -x r - 4 = 0$$

$$r = -8 \quad m = -r^2 - 4r = -64 + 32 = -32 \quad n^2 + 4m = 0 \rightarrow (n + 1)(n + 8)$$

$$n^2 + 4m - 12 = 0 \rightarrow (n - 3)(n + 8) \rightarrow n = 3, n = -8$$

$$n = -8, n = -1$$

$$x - (-1) = 5$$

$$r^2 + 4r + m = 0 \Rightarrow m = -r^2 - 4r$$

$$r^2 + 4r - x m = 0 \Rightarrow x m = r^2 + 4r$$

$$m = \frac{r^2 + 4r}{x}$$

$$-r^2 - 4r = \frac{r^2 + 4r}{x} \Rightarrow x^2(r^2 + 4r) = r^2 + 4r \Rightarrow$$

$$-x r^2 - 14r = r^2 + 4r \quad -x r^2 - 4r = 0 \Rightarrow r(-x r - 4) = 0 \quad r = 0 \quad -x r - 4 = 0$$