

1) $A(-1, 9)$ $y = am^r + b2x + c$

$(r, 21)$

$y = a(m - 21)^r + y_0$

$y = a(21 + 1)^r + 9 \rightarrow y = \frac{-1}{r} (m + 1)^r + 9$

$1 = a \times 14 + 9$

$y = \frac{-2^r}{r} - 21 + 14/2$

$-1 = a \times 14$

$a = -\frac{1}{14}$

2) $12^r + m^2 + m + 4 = 0$

$\Delta > 0$

$m^2 - (12 + 1)m + 4 > 0$

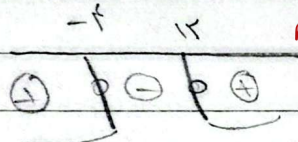
$m^2 - 13m + 4 > 0$

$(m - 12)(m + 1) > 0$

\downarrow
 12

\downarrow
 -1

\leftarrow $m < -1$ or $m > 12$



$S > 0 \rightarrow \frac{b}{a} > 0 \rightarrow -m > 10$
 $\cap m < 0$

$P > 0 \rightarrow \frac{m+4}{r} > 0 \rightarrow m > -4$

$I \cap II \cap III$

$(-4 > -10)$

3) $12^r + (m-1)m + 1 - m = 0$

$S = \frac{1}{P}$

$S = -\frac{b}{a} \quad P = \frac{c}{a}$

$\Delta > 0$

$m^2 + 1 - 4m - 12(1-m) > 0$

$m^2 + 1 - 4m - 12 + 12m > 0$

$\frac{-4m+1}{r} = \frac{r}{r-m}$

$a = (12-1)(m-1)$

$a = 11m^2 - 22m + 11$

$0 = 11m^2 - 22m - 11$

$0 = m^2 - 2m - 1$

$0 = (m-1)(m+1)$

$m_1 = \frac{1}{11}, m_2 = \frac{-1}{11}$

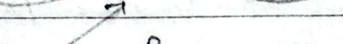
$11m^2 + 11m - 11 > 0$

$-1 \pm \sqrt{121} \quad -1 \pm \sqrt{121}$

$\frac{-1 \pm 11}{11} \quad \frac{-1 \pm 11}{11}$

$\frac{-1+11}{11} \quad \frac{-1-11}{11}$

$\frac{10}{11} \quad \frac{-12}{11}$



4) $x = nr - r$

$0 = nr - nr + r$

$r^2 + 3r = 5r - 2p$

$1 - r - t = a$

$S = \frac{1}{1} = 1 \quad p = -r$

$2_1 + n_2 = \frac{1}{n_1} + \frac{1}{x_2}$

$(\frac{1}{n_1} + \frac{1}{n_2}) (\frac{1}{n_1} + \frac{1}{n_2})$

$(n_1 + n_2) (x_1 + n_2 + n_1 n_2) + \frac{n_1 + n_2}{n_1 n_2}$

$\frac{1}{n_1 n_2} + \frac{1}{n_1} + \frac{1}{n_2} + \frac{1}{n_1 n_2}$

$a - \frac{1}{r} = \frac{r}{r}$

$y = 2r - \frac{1}{r} n - \frac{r}{r}$

5) $\sqrt{r} = n + r = y$

5

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

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

$r - 1 = r + r$

$r - r - 1 = 0$

$r = 1 + \sqrt{r} \quad \frac{1}{r} = 1 - \sqrt{r}$

$y^2 - 2y - 1 = 0$

$x_1 + x_2 = r$

$y = 1 \pm \sqrt{2}$

6) $rm^r - am + t = 0$

100

$r\alpha^r = \frac{t}{r} \quad \alpha^r = \frac{t}{r} \quad \alpha = \frac{t}{r}$

$S = f\alpha = a$

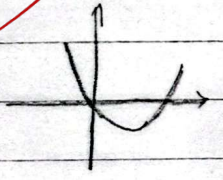
$r \times \frac{r}{r} = \frac{r}{r} \rightarrow a = 1$

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$r \times \frac{r}{r} = \rightarrow a = -1$

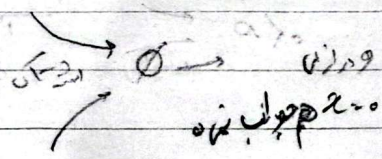
5

7) $y = ar^r + (r + ra)/a$



$\Delta > 0 \quad a > 0 \quad a > 0$

$\frac{-b}{a} > 0$
 $\frac{-r - ra}{a}$



$\frac{-r}{r} = \frac{0}{r + r} = \frac{0}{2r}$



مربعات کامل slope

8) $y = m^2 + am - x$
 $y = -m^2 - m + b$

$\frac{r}{-1} = \frac{-a}{1} \rightarrow a = r$

$y = -m^2 + (r - r)m + 1 \rightarrow m^2 + m - r = 0 \quad \begin{cases} m = 1 \\ m = -r \end{cases}$

$y = -(m-1)(m+r) + 1 = -m^2 - m + r + 1 \rightarrow b = r$

$ab = r$

$S = \alpha + \beta = -\frac{1}{r}$

$P = \alpha\beta = -\frac{r}{a}$

9) $ra^2 - am + b = 0$

$\frac{b}{r} = 1 = \frac{-a}{ra} \rightarrow a = -r$

$ra^2 + am - 4 = 0$

$S = (\alpha + 0i\omega) + (\beta + 0i\omega) = \frac{a}{r}$

$\alpha + \beta + 1 = \frac{a}{r} \rightarrow \frac{1}{r} + 1 = \frac{a}{r} \rightarrow a = r$

$P = (\alpha + 0i\omega)(\beta + 0i\omega) = \alpha\beta + 0i\omega(\alpha + \beta) + 1 = \frac{b}{r}$

$\alpha\beta = \frac{b}{r} \times \frac{r}{a} = \frac{b}{a}$

$b = -r \times \frac{a}{r} = -\frac{r}{a} + \frac{1}{r} \left(\frac{1}{r}\right) + \frac{1}{r} = \frac{b}{r} \rightarrow b = -4$

$[a \ b] = \left[\frac{-4}{r} \right] = -r$

10) $x^2 + 4x + m = 0 \quad x^2 + 4x + m = 0 \quad (m+1)(m+8)$

$x^2 + 4x + m = 0 \quad m = -x^2 - 4x \rightarrow (x+2)^2 - 4 = 0$

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

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

$-r(x+2)(x+2) = x^2 + 4x \rightarrow r = -1 \rightarrow \boxed{r}$

$x = 0 \quad x = -4$

\boxed{r}