

$$y = -x^2 + bx + c$$

1

$$\frac{-\Delta}{2a} = V \rightarrow \frac{b^2 - 4(-1)(c)}{-2(-1)} = \frac{b^2 + 4c}{2} = V$$

2

$$b^2 + 4c = 2V \quad b^2 = 16 \Rightarrow b = \pm 4$$

3

$$a) f(x) = x^2 + 2x + c \quad x^2 + 2x + c = 0$$

جواب ندارد $\Delta = 4 - 4c < 0$

$$b) f(x) = (x-2)^2 - 2(x-2) - 1 = 0$$

4

$$x^2 - 2x - 1 = 0 \quad (x-2)(x+1) = 0 \quad x \begin{cases} x=2 \\ x=-1 \end{cases}$$

$$x-2 = 2 \rightarrow x^2 + 1 = 0 \rightarrow \text{جواب ندارد}$$

$$x-2 = -1 \rightarrow x^2 - 3 = 0 \rightarrow x = \pm \sqrt{3}$$

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

5

$$B = \alpha + \tau \quad p = \frac{m}{c} = (\alpha)(\alpha + \tau) = \alpha^2 + \tau\alpha - m$$

$$S \rightarrow \frac{1}{c} = p = 2\alpha + \tau \quad m = 12$$

6

$$x^2 - 1 = 2x + 12 = 0 \quad \Delta = (2)^2 - 4(1)(12) > 0 \checkmark$$

7

$$3x^2 - 9x + m - 1 = 0 \quad 2\alpha - B = c$$

$$S = \frac{9}{3} = 3 = \frac{B+c}{2} + B = \frac{3B+c}{2} \quad \alpha = c+B \Rightarrow \alpha = \frac{B+c}{2}$$

8

$$\Rightarrow c = 3B + c \Rightarrow 3B = 0 \quad B = 0$$

$$\alpha B = 0 \rightarrow \frac{m-1}{3} = 0 \Rightarrow m = 1 \quad y = 3x^2 - 9x \quad \Delta > 0 \checkmark$$

9

$$-mx^2 + cx + m - 1 = 0$$

$$B = \frac{1}{\alpha} \quad p = 1 \rightarrow \frac{m^2 - 1}{-m} = 1 \quad m^2 - 1 = -m \Rightarrow m^2 + m - 1 = 0$$

$$m^2 - 1 = 2x^2 + cx + 1 = 0 \rightarrow \Delta = 0 \rightarrow \text{ریشه متساوی ندارد}$$

10

$$m^2 - 1 = -2x^2 + cx - 1 \rightarrow p = 1 \quad m = 1$$

$$x^r - mx + p = 0$$

$$\alpha B^r = f \quad B = \frac{f}{r}$$

$$\alpha B = \frac{f}{r} = p$$

$$(\alpha B) B$$

$$\Rightarrow \alpha = \frac{p}{r}$$

$$\alpha + \beta = \frac{p}{r} + \frac{f}{r} = \frac{px + f}{r}$$

(5)

(5)

$$\Delta = \left(\frac{fp}{r}\right)^2 - f^2$$

$$m = \frac{fp}{r}$$

$$= \frac{1}{r^2} (fp)^2 - f^2 > 0 \checkmark$$

$$x^r - rx + m = 0$$

$$\beta = r\alpha$$

$$S = E \quad p = m$$

$$r\alpha + \alpha = f \quad (r+1)\alpha = f \Rightarrow \alpha = \frac{f}{r+1}, \beta = \frac{rp}{r+1}$$

$$\alpha\beta = \frac{1}{r+1} \cdot \frac{rp}{r+1} = \frac{p}{r+1}$$

$$\Delta = 19 - f^2 > 0 \checkmark$$

(V)

(5)

$$x^r - vx + p = 0$$

$$S = V \quad p = r$$

$$\alpha^r + \frac{1}{\alpha^r} = \left(\alpha + \frac{r}{\alpha}\right) \left(\frac{r^r + \frac{1}{\alpha^r}}{\alpha^r} - r\right)$$

$$VA (rp) = p \cdot 1$$

$$S^r - r = r^r - r$$

(A)

(5)

$$h(t) = -10t^r + a_0 t$$

$$10t(a-t) = 0$$

وقتی که $t=0$ ، $(t=a)$ در فاصله زمین

$$\text{max} \Rightarrow \frac{-b}{2a} = \frac{-a_0}{-20} = \frac{a}{r}$$

(9)

(5)

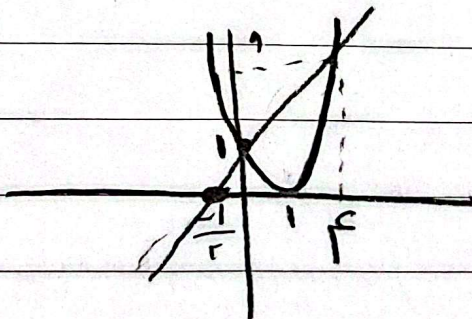
$$\rightarrow -10 \left(\frac{a}{r}\right)^r + a_0 \times \left(\frac{a}{r}\right) = \frac{-10a^r + ra_0}{r} = \frac{10a^r}{r} = 4\sqrt{a}$$

(10)

$$\text{a)} (x-1)^r = |x+1|$$

$$\hookrightarrow \frac{x/0 = -1}{y/1 = 0}$$

$$x = 0, 1$$



(5)

$$\text{b)} x^r + rx = |x+r|$$

$$x = -r, 1$$

