

$$y = -\frac{1}{p}x^2 + \frac{p}{8}x + 1$$

$$\sum_{i=1}^n (f_i, p) \quad h = p$$

$$k = p$$

پارس زندگی
سوال (1)

$$y = a(x-h)^2 + k$$

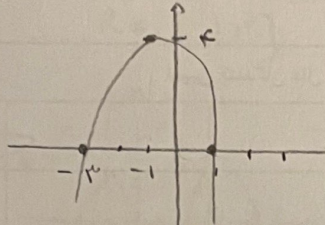
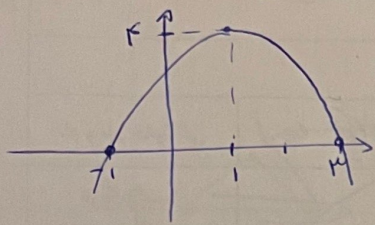
$$y = a(x-p)^2 + p \Rightarrow y = -\frac{1}{p}(x-p)^2 + p$$

$$y = 0 \Rightarrow 0 = -\frac{1}{p}(x-p)^2 + p = \frac{1}{p}(x-p)^2 - p \Rightarrow (x-p)^2 = 9$$

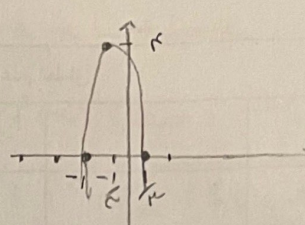
$$\Rightarrow \begin{cases} x-p = 3 \Rightarrow x = 7 \\ x-p = -3 \Rightarrow x = 1 \end{cases}$$

$$\boxed{x = 7, 1}$$

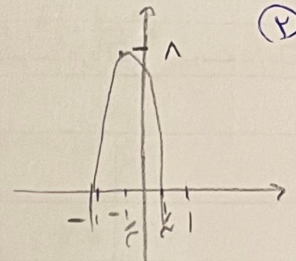
$$A(\alpha, B) \quad y = 1 - p f(rx+r)$$



$$y = f(x+p)$$

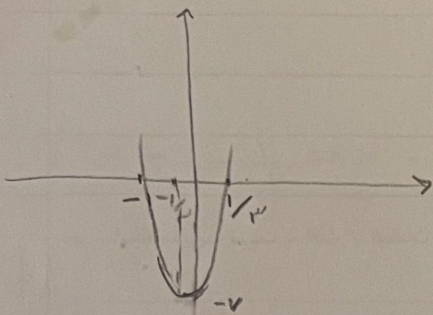


$$y = f(rx+p)$$



$$y = \frac{1}{p}f(rx+p)$$

سوال (2)



$$A(\alpha, B) = (-\frac{1}{p}, -p)$$

$$\boxed{\alpha B = -\frac{1}{p}x - p = \frac{p}{p}}$$

$$y = p - \sqrt{px}$$

$$y = -\left(p - \sqrt{p(x+1)}\right) + 0 \Rightarrow y = -p + \sqrt{px+p} + 0$$

$$f(x) = \frac{p}{p}$$

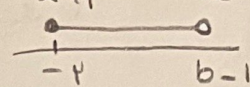
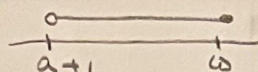
$$\sqrt{px+p} + p = \frac{p}{p} \Rightarrow \sqrt{px+p} = \frac{p}{p} - p = \frac{p}{p} - \frac{p^2}{p} \Rightarrow px+p = \frac{p}{p}$$

$$\Rightarrow \boxed{x = \frac{1}{p}}$$

سوال (3)

$$D_f = (a, r] \quad a < x-1 \leq r \Rightarrow a+1 < x \leq r$$

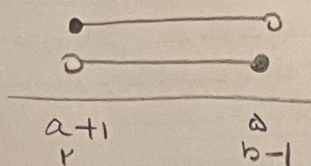
$$D_g = [-1, b) \quad -1 \leq x+1 < b \Rightarrow -r \leq x < b-1$$



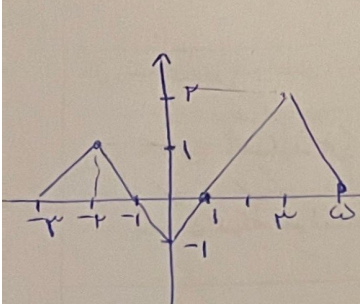
② مثال ٣

$$\Rightarrow a+1 = -r \Rightarrow \boxed{a = -r}$$

$$b-1 = r \Rightarrow \boxed{b = r+1}$$



$$a-b = -r - (r+1) = -2r-1 \Rightarrow \boxed{a-b = -2r-1}$$



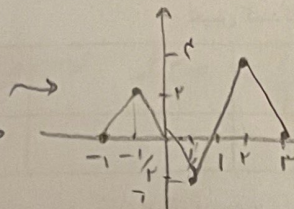
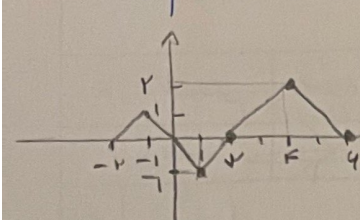
$$y_r = \sqrt{|rf(x-r)|}$$

$$y_1 = f\left(\frac{x}{r} + 1\right)$$

③ مثال ٤

$$\Rightarrow D = [-r, r] \quad -r \times \frac{1}{r} + 1 = -\frac{1}{r} \Rightarrow D_{y_r} = \left[-\frac{1}{r}, \frac{1}{r}\right]$$

$$R = [-1, r] \quad r \times \frac{1}{r} + 1 = 2 \Rightarrow D_{y_r} = [1, 2]$$



$$-1 \leq f(x) \leq 1 \Rightarrow -r \leq rf(x-r) \leq r$$

$$\Rightarrow 1 \leq \sqrt{|rf(x-r)|} \leq \sqrt{r}$$

$$\boxed{[1, \sqrt{r}]}$$

④ مثال ٥

$$f\left(-\frac{1}{a}\right) = \frac{1}{r} \Rightarrow -\left(\frac{1}{a}\right)^r [-1] = \frac{1}{r} \quad b=1 \Rightarrow \boxed{b-a=r}$$

$$a = \pm r$$

$$f(x) = \log_r x$$

$$g(x) = \log_r^{-x+r} + r$$

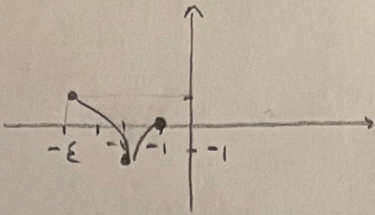
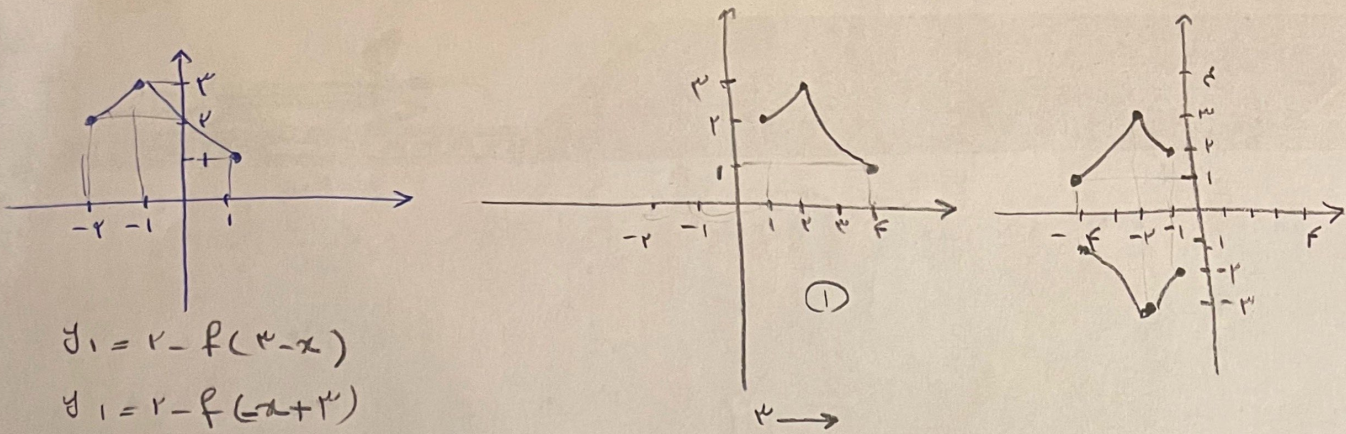
$$g(-1) = -\log_r 1^4 + r = -\log_r 1 + r = -f(1) + r = -1$$

$$g(-4) = -\log_r 4^4 + r = -\log_r 4^4 + r = -4(1) + r = -r$$

$$g(-1) + g(-4) = (-1) + (-r) = -r-1$$

⑤ مثال ٦

سؤال ٨



سؤال ٩

$$f(x) = \left| \frac{x+1}{rx+1} \right| \xrightarrow{\text{نقطة ١}} f(x) = \left| \frac{(x-r)+1}{r(x-r)+1} \right| = \left| \frac{x-1}{rx-r} \right| \xrightarrow{\text{نقطة ٢}}$$

$$g(x) = \left| \frac{x-1}{rx-r} \right| + 1$$

$$x + \left| \frac{x-1}{rx-r} \right| + 1 < 0 \quad \text{نقطة ٣}$$

$$\frac{x-1}{rx-r} + 1 + x < 0 \Rightarrow \frac{rx^2 - rx + rx - r + x - 1}{rx-r} < 0$$

$$\frac{rx^2 - rx - r + x - 1}{rx-r} < 0$$

$$\frac{-x+1}{rx-r} + 1 + x < 0 \Rightarrow \frac{rx^2 - rx - r}{rx-r} < 0$$

$$rx - r = 0 \Rightarrow x = \frac{r}{r}$$

$$\frac{1-\sqrt{5}}{r} \quad \frac{r}{r} \quad \frac{1+\sqrt{5}}{r}$$

$$\text{I} \cap \text{II}$$

سؤال ١٠

$$a(x-r)^p + rv \xrightarrow{\lim_{x \rightarrow \infty}} a(-r)^p + rv = 0 \Rightarrow a = \frac{rv}{\wedge}$$

$$f(x) = \frac{rv}{\wedge} (x-r)^p + rv$$

$$\sqrt{\wedge f(x) - f(x)^2} > 0 \quad 0 \leq \frac{rv}{\wedge} (x-r)^p + rv \leq \wedge$$

$$0 \leq \frac{rv}{\wedge} (x-r)^p + rv \Rightarrow \boxed{x \geq 0} \quad \text{I}$$

$$\Rightarrow Dg = \left[0, \frac{\wedge}{r} \right] \Rightarrow \boxed{0, 1, 2}$$

$$\frac{rv}{\wedge} (x-r)^p + rv \leq \wedge \Rightarrow (x-r)^p \leq \frac{\wedge}{rv} \Rightarrow \boxed{x \leq \frac{\wedge}{rv}} \quad \text{II}$$