

1)  $a^2 + 2a = a^2 - c \rightarrow 2a = -c \rightarrow a = -\frac{c}{2}$  ✓  $\frac{2}{0}$  (2) قابلیت

2)  $g(r) \rightarrow f+b=r \rightarrow b=-1$  ✓  
 $f(r) \rightarrow \frac{f+a}{f+1} = r \rightarrow a=11$  ✓ }  $f(1) \rightarrow \frac{1+11}{2+1} = \frac{12}{3} = 4$  ✓ (2) آفتاب

3)  $2x^2 + ax + b = 0 \rightarrow \begin{cases} -1 \cdot x \rightarrow 2 - a + b = 0 \\ f = -1 \rightarrow 2 + f + a + b = 0 \end{cases} \rightarrow \begin{cases} a - b = 1 \\ a + b = -1 \end{cases} \rightarrow \begin{cases} a = 0 \\ b = -1 \end{cases}$  ✓ (2)

$f(1) \rightarrow \frac{1+1+1}{2-4-1} = \frac{3}{-3} = -1$  ✓

4)  $f(-1)^2 = -a + b = 0 \rightarrow b - a = 1 \rightarrow b = a + 1$  ✓ (2)  
 $-c x^2 + ax + b = 0 \rightarrow -f(x+1)^2 = 0 \rightarrow -f x^2 - 2x + f = 0 \rightarrow \begin{cases} a = -1 \\ b = -1 \end{cases}$  ✓  
 = تقابلی

$a + b = -1$  ✓  
 $\Delta = a^2 + 4b = 0 \rightarrow b = -\frac{a^2}{4} \rightarrow a + c = -\frac{a^2}{4} \rightarrow a^2 + 4a + 4 = 0$   
 $(a+2)^2 = 0 \rightarrow a = -2 \rightarrow b = 1$

5)  $\Delta = m^2 - c < 0 \rightarrow -2 < m < 2$  ✓ (2)  
 $(1)^2 + m + 1 = 0 \rightarrow m + 2 = 0 \rightarrow m = -2$   
 $-2 < m < 2$  ✓

6)  $k - \frac{1}{x^2} \geq 0 \rightarrow k \geq \frac{1}{x^2} \rightarrow k x^2 \geq 1 \rightarrow x^2 \geq \frac{1}{k}$  ✓ (2)  
 $(-\infty, -\frac{1}{\sqrt{k}}] \cup [\frac{1}{\sqrt{k}}, \infty)$  ✓

7)  $m x^2 + 2m x + 1 \geq 0$  ✓ (2)  
 $m \geq 0 \rightarrow$  همیشه ✓  
 $m > 0 \rightarrow$  همیشه (min)  $\rightarrow \Delta \leq 0 \rightarrow 4m^2 - 4m \leq 0 \rightarrow m(m-1) \leq 0 \rightarrow 0 < m \leq 1$  ✓  
 $m < 0 \rightarrow$  همیشه (max)  $\rightarrow \Delta \geq 0 \rightarrow 4m^2 - 4m \geq 0 \rightarrow m(m-1) \geq 0 \rightarrow m \leq 0$  ✓  
 همیشه ✓  $0 < m \leq 1$  ✓

$$A) \quad r_{n-1} \rightarrow (r_{n-1}) (r_{n+1}) \rightarrow \frac{r_{n-1} - 1}{r_{n-1}} \rightarrow r_{n+1} \quad (7)$$

$$r_{n-1} + 1 = r + k = r_{n+1} \rightarrow \boxed{k=0} \quad \checkmark$$

$$\rightarrow r_{n-1} = 0 \rightarrow \boxed{a = \frac{1}{r}} \quad \checkmark$$

$$a = \frac{1}{r} \leftarrow \text{Gib}$$

$$\boxed{a+k = \frac{1}{r}} \quad \checkmark$$

$$9) \quad r a(-\frac{r}{r}) + r = r_{n+1}(-\frac{r}{r}) + b \rightarrow -ra + r = -r + b \rightarrow -ra + r = -r \quad (7)$$

$$b \rightarrow \frac{r(0) - r}{r(0) + r} \rightarrow -r = r(0) + b \rightarrow b = -r \quad \checkmark$$

$$a = \frac{1}{r} \quad \checkmark$$

$$a - b = \frac{1}{r} - (-r) = \frac{1}{r} + r \quad \checkmark$$

$$b) \quad \cancel{r} \rightarrow r \rightarrow r \quad r = r \rightarrow r a^r + r a \rightarrow r a(a+1) = r_{n+1} = r$$

$$\left. \begin{aligned} -r &= -\frac{r}{r} \\ 1 &= \frac{r}{r} \end{aligned} \right\} a(a+r) \leftarrow a^r + r a - 1 = 0 \leftarrow r a^r + r a - \frac{r}{r} = 0 \quad (7)$$