

(iv)

$\sqrt{m-3}$ در $n = \sqrt{y-3}$ است
 $m^2 + n^2 = y$

$n = y^2 - 4y + 3$
 $n^2 + y^2 = y^4 - 8y^3 + 10y^2 - 4y + 3$
 $n^2 + y^2 = y$ در $y = 1$ و $y = 3$
 $\frac{1}{y} = \frac{1}{y^2 + 1}$

$n = y + \sqrt{y} \Rightarrow n - y = \sqrt{y} \Rightarrow n^2 - 2ny + y^2 = y \Rightarrow n^2 - y(2n-1) + n^2 = y$

$$\frac{f(m+1) - f(1)}{f(1)} \leq \frac{f(m+1) - f(m)}{f(m)}$$

$f(m+1) - \sqrt{f(m+1) - f(m)}$
 $n + \frac{1}{f} - \sqrt{\frac{f(m+1)}{f}}$ در $a=1, b=1, c=1$
 $1+1+1=3$

$\frac{n}{\sqrt{m^2-2}} = y \Rightarrow \frac{n^2}{m^2-2} = \frac{m_1^2}{m_1^2-2} \Rightarrow \frac{m_1^2}{m_1^2-2} = \frac{n_1^2}{n_1^2-2}$

$y = \frac{\sqrt{2x}}{\sqrt{x^2-1}}$
 هم علامت هست پس نیازی به علامت $\pm$ نیست

$y = \frac{n}{1-n} \Rightarrow \frac{y}{1+y} = \frac{r}{1-r} \Rightarrow \frac{y}{1-y} = \frac{r}{1-r}$

$\theta^{-1}(-\frac{r}{\theta}) = (\frac{r}{\theta})^2 \Rightarrow \frac{r}{\theta} = \frac{9}{\theta^2}$
 $\frac{9}{\theta^2} + (-\frac{r}{\theta}) = \frac{-\theta + 2r}{\sqrt{2}} \Rightarrow \sqrt{\frac{-r^2}{2}}$

$a = g^{-1}(12) = g(a) = 12$
 $12 = F(a) = \sqrt{F(a)}$
 $12 = u^2 + 4$
 $u^2 = 8 \Rightarrow u = \pm 2\sqrt{2}$
 $12 = u^2 + 4 \Rightarrow u^2 = 8 \Rightarrow u = \pm 2\sqrt{2}$
 $a = F^{-1}(9) = \sqrt{9-1} = \sqrt{8} = 2\sqrt{2}$