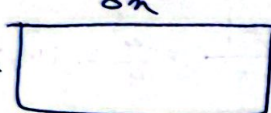
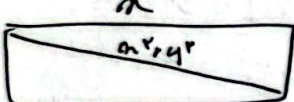


۱  $\frac{n}{y} = \frac{5}{4}$ افزایش طول
آیت $\frac{n'}{y} = \frac{1+\sqrt{5}}{2}$

$\frac{S_{\text{کل}}}{S_{\text{اقل}}} = \frac{\frac{n'}{y} = 4x}{\frac{n}{y} = 4x} = \frac{n'}{n} = \frac{1+\sqrt{5}}{2} = \frac{1+\sqrt{5}}{\frac{5}{4}} = \frac{4+4\sqrt{5}}{5} = \boxed{1.4, 1.4\sqrt{5} = 0.4(1+\sqrt{5})}$

۲  $\frac{\sqrt{2x^2+y^2}}{n} = \frac{1+\sqrt{5}}{2}$ ۲۵۱۵۰

$\frac{n^2 y^2}{n^2} = \frac{4+4\sqrt{5}}{4} \Rightarrow 1 + \frac{y^2}{n^2} = \frac{4+4\sqrt{5}}{4} \Rightarrow \left(\frac{y}{n}\right)^2 = \frac{4+4\sqrt{5}}{4}$
 $\left(\frac{y}{n}\right)^2 = \frac{1+\sqrt{5}}{2} \Rightarrow \boxed{\left(\frac{n}{y}\right)^2 = \frac{2}{1+\sqrt{5}}}$

۳ $3a + \sqrt{2a^2 + 4a} = 2 \Rightarrow \sqrt{2a^2 + 4a} = 2 - 3a$ ۲۵۱۵۰

$2a^2 + 4a = 9a^2 - 12a + 4 \Rightarrow \sqrt{2a^2 + 4a} = 2 - 3a$ ۲۵۱۵۰

$a^2 - 14a + 4 = 0 \Rightarrow (a - 14)(a - 4) = 0 \Rightarrow a = \frac{14}{1} = 14$ طرف دیگر از منی که در ابرسان
بی رانده منی با نند

$a = \frac{2}{\sqrt{5}} \checkmark \Rightarrow \boxed{\frac{a+1}{a} = \frac{\frac{2}{\sqrt{5}} + 1}{\frac{2}{\sqrt{5}}} = \frac{2 + \sqrt{5}}{2} = 1.5 \checkmark \frac{q}{r}}$

۴ $\frac{\sqrt{n+1}}{\sqrt{n-1} + 2} - \frac{\sqrt{n+1}}{2 - \sqrt{n-1}} = \frac{n-1}{\sqrt{n-1}}$ ۲۵۱۵۰

$\frac{-2\sqrt{2n-1}}{1-n} = \frac{\sqrt{n-1}\sqrt{n-1}}{\sqrt{n-1}} = \frac{1-n}{1-n} = 1$ ۲۵۱۵۰

$\Delta = 14^2 - 4(1)(4) = 144 \Rightarrow \frac{14 \pm \sqrt{144}}{2} = 14 \pm 12 = 26 \text{ یا } 2$ ۲۵۱۵۰

۵ $\frac{1}{\sqrt{2-n} + 2} - \frac{1}{2 - \sqrt{2-n}} = \frac{2-n}{5\sqrt{2-n}}$ ۲۵۱۵۰

$\frac{2 - \sqrt{2-n} - \sqrt{2-n} - 2}{2 - 2 + n} = \frac{2-n}{5\sqrt{2-n}} \Rightarrow \frac{-2\sqrt{2-n}}{2+n} = \frac{\sqrt{2-n}\sqrt{2-n}}{5\sqrt{2-n}} = -1 = 2+n$
 $n = -12$ ۲۵۱۵۰

$$\frac{1}{m^2} + \frac{1}{(1-m)^2} = \frac{14}{9} \Rightarrow \frac{m^2 - 2m + 1 + m^2}{(m^2 - m)^2} = \frac{14}{9} \Rightarrow \frac{2m^2 - 2m + 1}{(m^2 - m)^2} = \frac{14}{9}$$

$$\frac{2m^2 - 2m + 1}{(m^2 - m)^2} = \frac{14}{9} \Rightarrow \frac{2(m^2 - m) + 1}{(m^2 - m)^2} = \frac{14}{9} \Rightarrow \frac{2t + 1}{t^2} = \frac{14}{9} \Rightarrow 14t^2 - 2t - 9 = 0$$

$$t = \frac{1 \pm \sqrt{1 + 63}}{7} = \frac{1 \pm 8}{7} \Rightarrow t = \frac{9}{7} \text{ or } t = -\frac{1}{7}$$

$$m^2 - m = \frac{9}{7} \Rightarrow m^2 - m - \frac{9}{7} = 0 \Rightarrow m = \frac{1 \pm \sqrt{1 + 36}}{2} = \frac{1 \pm 6}{2} \Rightarrow m = \frac{7}{2} \text{ or } m = -\frac{5}{2}$$

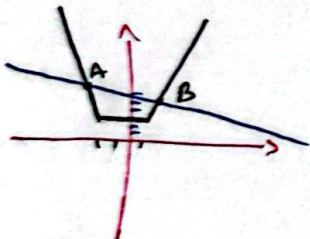
$$\sqrt{-m^2 + 4m - 1} \geq 0 \Rightarrow \sqrt{-(m^2 - 4m + 1)} \geq 0 \Rightarrow \sqrt{-(m-2)^2 + 3} \geq 0$$

$$-\frac{1}{4} + \frac{1}{4} = 0 \Rightarrow \frac{1}{4} \leq m \leq \frac{5}{4} \Rightarrow |m-2| \leq \sqrt{3}$$

$$\sqrt{-m^2 + 4m - 1} \geq 0 \Rightarrow -m^2 + 4m - 1 \geq 0 \Rightarrow m^2 - 4m + 1 \leq 0 \Rightarrow (m-2)^2 \leq 3 \Rightarrow m \in [2-\sqrt{3}, 2+\sqrt{3}]$$

$$(m-2)(m-2) \geq 0 \Rightarrow m \leq 2 \text{ or } m \geq 2 \Rightarrow m \in (-\infty, 2] \cup [2, \infty)$$

$$y = \frac{1}{x} \Rightarrow y = -\frac{1}{x} \Rightarrow y = \frac{1}{x} \Rightarrow y = \frac{1}{x} \Rightarrow y = \frac{1}{x}$$



$$\frac{1}{x} = -\frac{1}{x} \Rightarrow x = 0 \Rightarrow \text{No solution}$$

$$\frac{1}{x} = \frac{1}{x} \Rightarrow x = 0 \Rightarrow \text{No solution}$$

$$y = \frac{1}{x} \Rightarrow y = \frac{1}{x} \Rightarrow y = \frac{1}{x} \Rightarrow y = \frac{1}{x}$$

$$|m-2| = \frac{1}{2} \Rightarrow m = \frac{5}{2} \text{ or } m = \frac{3}{2} \Rightarrow y = 4 \text{ or } y = \frac{4}{9}$$

$$A(1, 4), C(4, 1), B(0, 2)$$

$$AB = \sqrt{(1-0)^2 + (4-2)^2} = \sqrt{5}$$

$$CH = \frac{|4y - 2x - 1|}{\sqrt{4 + 1}} = \frac{|4 - 2 - 1|}{\sqrt{5}} = \frac{1}{\sqrt{5}}$$

$$\frac{1}{t} + \frac{1}{t+9} = \frac{1}{2} \Rightarrow \frac{t+9}{t(t+9)} + \frac{1}{t(t+9)} = \frac{1}{2} \Rightarrow \frac{t+10}{t(t+9)} = \frac{1}{2}$$

$$2(t+10) = t(t+9) \Rightarrow 2t + 20 = t^2 + 9t \Rightarrow t^2 + 7t - 20 = 0$$

$$t = \frac{-7 \pm \sqrt{49 + 160}}{2} = \frac{-7 \pm 13}{2} \Rightarrow t = 3 \text{ or } t = -10$$

$$t = 3 \Rightarrow x = 3, y = \frac{1}{3}$$

$$t = -10 \Rightarrow x = -10, y = -\frac{1}{10}$$

$$x = 3, y = \frac{1}{3}$$