

$$\pi < n < \frac{5\pi}{2}$$

ربع سوم

کدام سوال: ربع سوم

$$\sqrt{1 + \tan^2 n} \left(r \sin^2 \frac{\pi}{2} - \sin^2 n \right) = ?$$

$$\sqrt{1 + \tan^2 n} = \sqrt{\frac{1}{\cos^2 n}} = \frac{1}{\cos n}$$

$$\sin \frac{\pi}{2} = \frac{\sqrt{r}}{r} \longrightarrow r \sin^2 \frac{\pi}{2} = 1 \Rightarrow 1 - \sin^2 n = \cos^2 n$$

$$\Rightarrow \frac{1}{\cos n} (\cos^2 n) = \underline{\underline{\cos n}}$$

• جواب در صورتی که ربع اول باشد $\sin \frac{\pi}{2}$

در اینجا باید اگر ربع اول بود درست است اما چون گفته $\pi < n < \frac{5\pi}{2}$ می شود ربع سوم که $\sin$ و $\cos$ در آن منفی است بنابراین

$$\sqrt{1 + \tan^2 n} = \frac{-1}{\cos n}$$

$$\Rightarrow \frac{-1}{\cos n} (\cos^2 n) = \underline{\underline{-\cos n}} \quad \text{جواب}$$

Konkur.in

$$\Rightarrow V + \xi \Delta_0 V - 1 \dots = 0 \Rightarrow (V + \Delta_0)(V - r_0) = 0 \Rightarrow V = -\Delta_0 \times$$

$$V = r_0 \quad \checkmark$$

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کتابخانه

$$1 < \frac{2n-3}{n+1} < 2$$

	-1		K
-	-	-	+
+	+	+	+
+	-	+	+

	-4	-1	
+	-	-	+
-	-	-	+
-	+	-	-

$$\left((-\infty, -1) \cup (4, +\infty) \right) \cap \left((-\infty, -4) \cup (-1, +\infty) \right) = (-\infty, -4) \cup (4, +\infty)$$

۳۰ می ۱۲۹۹

$$\binom{1}{x} + \binom{1}{a} + \binom{1}{y} = v_0 + 27 + 21 = 128$$

$$ra + \sqrt{ra^2 + fa} = r$$

$$\frac{a+1}{a} = ?$$

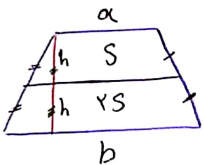
$$\sqrt{ra^2 + fa} = r - ra \longrightarrow r - ra \geq 0 \Rightarrow r \geq ra \Rightarrow a \leq \frac{r}{r}$$

$$\Rightarrow ra^2 + fa = r - 12a + 9a^2$$

$$\Rightarrow 9a^2 - 12a + r = 0 \Rightarrow a = r \quad \times$$

$$a = \frac{r}{3} \quad \checkmark$$

$$\frac{\frac{r}{3} + 1}{\frac{r}{3}} = \frac{\frac{4}{3}}{\frac{r}{3}} = \frac{4}{r} \quad \left[\frac{4}{r} \right]$$



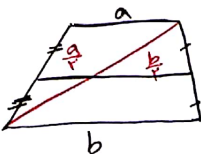
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$$\Rightarrow \frac{S}{rs} = \frac{1}{r} = \frac{\frac{1}{r}(a + (\frac{a+b}{r}))h}{\frac{1}{r}(b + (\frac{a+b}{r}))h}$$

$$\Rightarrow ra + a + b = b + \frac{a+b}{r} \Rightarrow ra = \frac{a+b}{r}$$

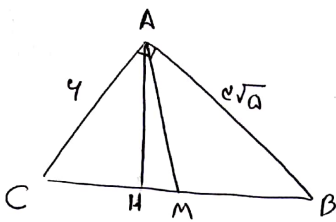
$$\Rightarrow 4a = a + b \Rightarrow 3a = b \Rightarrow \frac{a}{b} = \frac{1}{3}$$

$$\text{نسبت } a:b = \frac{a+b}{r}$$



$$\Rightarrow \frac{a}{r} + \frac{b}{r} = \frac{a+b}{r}$$

سایت کنکور
Konkur.in



$$a^2 = b^2 + c^2 = 4^2 + 4^2 = 8 \Rightarrow a = \sqrt{8} = 2\sqrt{2}$$

$$\Rightarrow a = \sqrt{8} = 2\sqrt{2}$$

$$\underline{BC = 9}$$

A_{جواب} $AH \times BC = AB \times AC \Rightarrow AH \times 9 = 5\sqrt{2} \times 4 \Rightarrow AH = 2\sqrt{2}$

$$CH = \sqrt{4^2 - (2\sqrt{2})^2} = 2$$

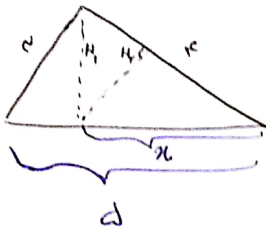
$$CM = \frac{9}{2} = 4.5 \Rightarrow \underline{MH = \frac{1}{2}}$$

B_{جواب} $AC^2 = CH \times BC \Rightarrow 4^2 = CH \times 9 \Rightarrow CH = \frac{16}{9}$

$$MH = CM - CH = 4.5 - \frac{16}{9} = \frac{1}{2}$$

$$\frac{S_{ABC}}{S_{AMH}} = \frac{\frac{1}{2} AH \times BC}{\frac{1}{2} AH \times MH} = \frac{9}{\frac{1}{2}} = \underline{\underline{18}}$$

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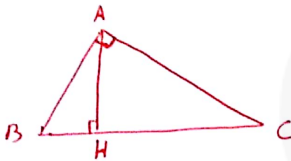


$$H_1 \times a = r \times \frac{a}{2} \Rightarrow H_1 = \frac{r}{2}$$

$$r = a \times \frac{1}{2} \Rightarrow a = \frac{r}{2}$$

$$\frac{H_r}{H_1} = \frac{\frac{r}{2}}{\frac{r}{2}} = \frac{r}{a} \checkmark$$

$$\frac{1}{2} \times \frac{r}{a} = H_r \times \frac{1}{r} \Rightarrow H_r = \frac{r}{2}$$



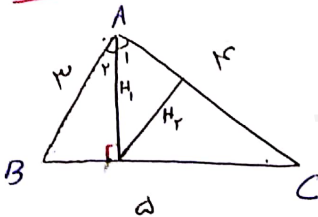
$$AB^2 = BH \times BC$$

$$AC^2 = CH \times BC$$

$$AB \times AC = AH \times BC$$

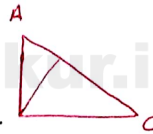
(نکته)

پس از آن



$$\sin C = \frac{r}{a}$$

$$\sin A_1 = \frac{H_r}{H_1}$$



$$C + A_1 = 90^\circ \Rightarrow \sin C = \cos A_1$$

$$\cos C = \sin A_1 \star$$

$$\Rightarrow \sin A_1 = \frac{H_r}{H_1} = \cos C = \sqrt{1 - \sin^2 C} = \frac{r}{a}$$

erazi-eram

$$\sin\left(\frac{14\pi}{9}\right) \cos\left(-\frac{14\pi}{9}\right) + \tan\left(\frac{14\pi}{9}\right) \sin\left(-\frac{14\pi}{9}\right)$$

$$= \sin\left(\frac{14\pi - \pi}{9}\right) \cos\left(\frac{14\pi - \pi}{9}\right) + \tan\left(\frac{14\pi - \pi}{9}\right) \sin\left(\frac{14\pi - \pi}{9}\right)$$

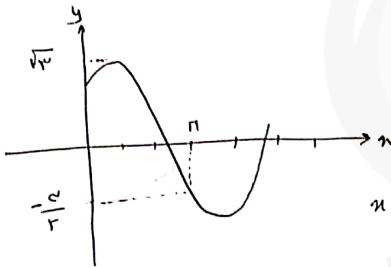
$$\cos(-\alpha) = \cos \alpha$$

$$\sin(-\alpha) = -\sin \alpha$$

$$= \sin\left(5\pi - \frac{\pi}{9}\right) \cos\left(5\pi - \frac{\pi}{9}\right) - \tan\left(5\pi - \frac{\pi}{9}\right) \sin\left(5\pi - \frac{\pi}{9}\right)$$

$$= \left(-\sin \frac{\pi}{9}\right) \left(-\cos \frac{\pi}{9}\right) - \left(-\tan \frac{\pi}{9}\right) \left(-\sin \frac{\pi}{9}\right)$$

$$= \left(-\frac{\sqrt{2}}{2}\right) \left(-\frac{\sqrt{2}}{2}\right) - (-1) \left(-\frac{1}{2}\right) = \frac{2}{4} - \frac{1}{2} = \frac{1}{4}$$



$$y = a + b \sin\left(x + \frac{\pi}{2}\right)$$

$$x = \pi \Rightarrow \frac{-\sqrt{2}}{2} = a + b \sin\left(\pi + \frac{\pi}{2}\right)$$

$$\Rightarrow \frac{-\sqrt{2}}{2} = a + b \left(-\frac{\sqrt{2}}{2}\right) \Rightarrow \underline{2a - \sqrt{2}b = -\sqrt{2}}$$

$$x = \frac{\pi}{2} \Rightarrow \sqrt{2} = a + b \sin\left(\frac{\pi}{2} + \frac{\pi}{2}\right)$$

$$\underline{\sqrt{2} = a + b}$$

$$\Rightarrow \begin{cases} a + b = \sqrt{2} \\ 2a - \sqrt{2}b = -\sqrt{2} \end{cases} \Rightarrow \begin{cases} -2a - 2b = -2\sqrt{2} \\ 2a - \sqrt{2}b = -\sqrt{2} \end{cases}$$

$$\frac{-2b - \sqrt{2}b = -2\sqrt{2} - \sqrt{2}}{-2 - \sqrt{2}} \Rightarrow b = \frac{2\sqrt{2} + \sqrt{2}}{2 + \sqrt{2}}$$

$$= \frac{\sqrt{2}(2 + \sqrt{2})}{2 + \sqrt{2}} = \underline{\underline{\sqrt{2}}}$$

$$(r/a)^{x-1} = \left(\frac{ra}{a}\right)^{x-1} \rightarrow \log_a(rn+1) = ?$$

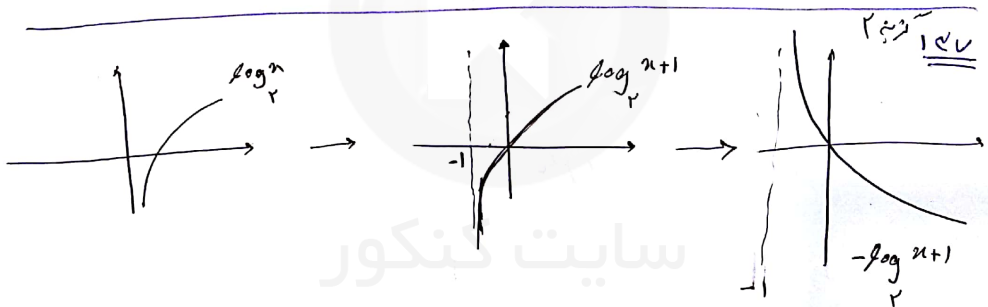
$$(r/a)^{x-1} = \left(\left(\frac{r}{a}\right)^{-1}\right)^{x-1} = \left(\frac{r}{a}\right)^{-x+1}$$

$$\Rightarrow r_{n-1} = -r_n^r \Rightarrow r_n^r + r_{n-1} = 0 \Rightarrow (r_{n-1})(n+1) = 0$$

$$r_{n+1} > 0$$

$$\begin{cases} n = -1 & \times \\ n = \frac{1}{r} & \checkmark \end{cases}$$

$$\log_a^r = \log_{r^r}^r = \frac{r}{r}$$



$$-\log_r^{n+1} = \log_r^{(n+1)^{-1}}$$

$$\begin{cases} \frac{1+n^3}{|n+2|} & n \neq -2 \\ a & n = -2 \end{cases}$$

۱۴۸ کرسه ۱

از چپ می‌رسد $\lim_{n \rightarrow -2^-} f(n) = f(-2) = a$

$$\lim_{n \rightarrow -2^-} \frac{f(n)}{n} = \lim_{n \rightarrow -2^-} \frac{1+n^3}{-n-2} = \frac{0}{0} \xrightarrow{\text{hop}} \frac{3n^2}{-1} = \underline{\underline{-12}}$$

$$P(A) = 0.7$$

۱۴۹ کرسه ۱

$$P(B) = 0.2$$

$$P(B|A) = 0.1 \Rightarrow P(B|A) = \frac{P(A \cap B)}{P(A)} \Rightarrow P(A \cap B) = 0.07$$

$$\Rightarrow P(A \cup B) = P(A) + P(B) - P(A \cap B)$$

$$= 0.7 + 0.2 - 0.07 = \underline{\underline{0.83}}$$

کرسه اول

۱۵۰ کرسه ۲

$$\bar{n} = 10 \Rightarrow CV_1 = \frac{\sigma}{\bar{n}} = \frac{1}{10}$$

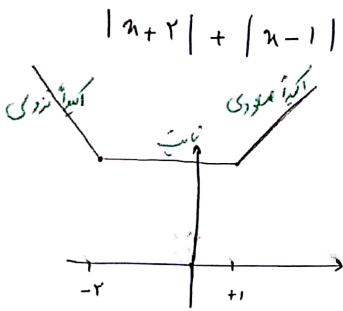
کرسه دوم

$$\bar{n} = 14$$

$$\sigma^2 = 14 \Rightarrow CV_2 = \frac{\sigma}{\bar{n}} = \frac{1}{14}$$

$$\frac{1}{14} < \frac{1}{10}$$

CV ضریب تغییرات نسبه دوم کمتر است بنابراین
کمتر از آنها بهتر است
کرسه دوم



$(-\infty, -2)$ کدام منفرجه

$$4 \sin x \sin\left(\frac{3\pi}{4} - x\right) = 1$$

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$$\sin\left(\frac{3\pi}{4} - x\right) = -\cos x \Rightarrow -4 \sin x \cos x = 1$$

$$-2 \sin 2x = 1 \Rightarrow \sin 2x = -\frac{1}{2}$$

$$\begin{cases} 2x = 2k\pi - \frac{\pi}{6} \Rightarrow x = k\pi - \frac{\pi}{12} \\ 2x = 2k\pi + \pi + \frac{\pi}{6} \Rightarrow x = k\pi + \frac{7\pi}{12} \end{cases} \begin{cases} \pi - \frac{\pi}{12} \\ 2\pi - \frac{\pi}{12} \\ \frac{7\pi}{12} \\ \frac{19\pi}{12} \end{cases}$$

$$\rightarrow \pi - \frac{\pi}{12} + 2\pi - \frac{\pi}{12} + \frac{7\pi}{12} + \frac{19\pi}{12} = 6\pi$$

اوپ

$$\frac{2x + 10}{4 \times \frac{1}{\sqrt{2} \sqrt{2}}} = \frac{-14 + 10}{4 \times \frac{1}{12}} = \frac{-4}{\frac{1}{3}} = -12$$

3: 145

$$f(n) = \frac{n^r - 1}{n + |n|}$$

$$x \rightarrow 0^+ \Rightarrow \lim_{|x|=x} \frac{x^r - 1}{x + x} = \lim_{x \rightarrow 0^+} \frac{x^r - 1}{2x} = \frac{-1}{0^+} = -\infty$$

✓ ~~میتواند به~~ ∞ میل کند زیرا که x را در 0^+ قرار می دهیم
 ✓ اگر x به 0 میل کند کوچکتر از x را در 0^+ قرار می دهیم
~~که برای $x < 0$ تعریف نشده است~~

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$$f(n) = 2n + \sqrt{4n^2 + n}$$

$$n \rightarrow -\infty$$

$$2n + \sqrt{4} \left| n + \frac{1}{4} \right| = 2n - 2n - \frac{1}{2} = -\frac{1}{2}$$

$$\sqrt{an^2 + bn + c} \approx \sqrt{a} \left| n + \frac{b}{2a} \right|$$

$$n \rightarrow \infty$$

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$$f'(x) = \frac{\frac{1}{\sqrt{x}} (a - \sqrt{x}) + 2(1 + \sqrt{x})}{(a - \sqrt{x})^2} = \frac{\frac{-x}{\sqrt{x}} + 2}{9} = \frac{\sqrt{x}}{18}$$

riazi_eram

$$\begin{cases} \frac{1}{n-1} & n \geq 2 \\ -n^2 + an + b & n < 2 \end{cases}$$

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مستوی بر حسب

$$\Rightarrow -x^2 + ax + b = 1 \Rightarrow -x + 4 + b = 1 \Rightarrow \underline{b = -1}$$

$$f'(x) = \frac{-1}{(n-1)^2} = -1$$

$$f'(x) = -x^2 + a = -x + a \Rightarrow -x + a = -1 \Rightarrow \underline{a = 3}$$

$$g(x) = \frac{x^2 + 1}{x-1}$$

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$$(f \circ g)'(x) = 4$$

$$f'(a) = ?$$

$$(f \circ g)'(x) = g'(x) f'(g(x))$$

$$4 = (-3) f'(a) \Rightarrow \underline{f'(a) = -\frac{4}{3}}$$

$$g'(x) = \frac{x^2(n-1) - (x^2+1)}{(n-1)^2}$$

$$\Rightarrow g'(x) = -3$$

$$g(x) = a$$

$$\frac{f(\varepsilon) - f(1)}{\varepsilon - 1} = \frac{\frac{1}{\varepsilon} - (-\frac{1}{1})}{\varepsilon} = \frac{\frac{1}{\varepsilon} + 1}{\varepsilon} = \frac{1 + \varepsilon}{\varepsilon^2} = \frac{11}{\varepsilon}$$

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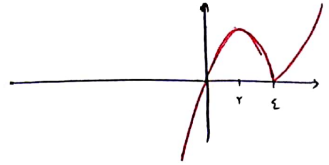
$$f'(x) = x + \frac{1}{x^2} = x + \frac{1}{\varepsilon} = \frac{9}{\varepsilon}$$

$$\Rightarrow \frac{11}{\varepsilon} - \frac{9}{\varepsilon} = \frac{2}{\varepsilon} = \frac{1}{\varepsilon} = \underline{\underline{1}}$$

$$f(x) = x|x-4| = \begin{cases} x^2 - 4x & x \geq 4 \\ -x^2 + 4x & x < 4 \end{cases}$$

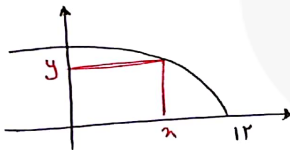
150

$$\rightarrow \begin{cases} 2x - 4 & x \geq 4 \\ -2x + 4 & x < 4 \end{cases}$$



بجای ۲، ۴ $\Rightarrow x=2 \rightarrow 4 \Rightarrow (2, 4)$
 $x=4 \rightarrow 0 \Rightarrow (4, 0)$

$$\sqrt{(2-4)^2 + (4-0)^2} = \sqrt{4+16} = \sqrt{20} = 2\sqrt{5}$$



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$$S = n \sqrt{12-n}$$

$$S' = \sqrt{12-n} + \frac{-n}{2\sqrt{12-n}} = \frac{2\sqrt{12-n} - n}{2\sqrt{12-n}} = 0$$

$$2\sqrt{12-n} - n = 0 \Rightarrow n = 4 \Rightarrow S = 4 \times 2 = 8$$

$$\Rightarrow y = 2$$

$$\left. \begin{matrix} (2, 7) \\ (2, -1) \end{matrix} \right\} r_c = 8 \Rightarrow \underline{r_c = 4}$$

$$2b = 4 \Rightarrow b = 2$$

$$a^2 = b^2 + c^2 = 4 + 9 = 13 \Rightarrow a = \sqrt{13}$$

$$\text{خارج در خارج} \quad e = \frac{c}{a} = \frac{4}{\sqrt{13}} = 0.11$$

۱۵۳
در هر صورت دقیقاً یک دایره از بیضی بیرون می‌آید. آن دایره بیضی را در دو نقطه تقاطع می‌دهد. معادلات آن برابر است با خارج قسمت تقسیم صورت بر مخرج.

فرمول فاصله از خط

$$A(x_0, y_0)$$

$$ax + by + c = 0$$

$$d = \frac{|ax_0 + by_0 + c|}{\sqrt{a^2 + b^2}}$$

$$\begin{array}{r} x^2 \\ -x^2 + x \\ \hline x \\ -x + 1 \\ \hline 1 \end{array} \quad \left| \begin{array}{r} x-1 \\ x+1 \end{array} \right| \Rightarrow y = x+1 \Rightarrow x - y + 1 = 0$$

$$\left(-3, \frac{9}{2}\right)$$

$$\Rightarrow d = \frac{\left| -3 + \frac{9}{2} + 1 \right|}{\sqrt{1^2 + (-1)^2}} = \frac{\frac{1}{2}}{\sqrt{2}} = \frac{\sqrt{2}}{2} \Rightarrow \underline{\underline{\frac{1}{\sqrt{2}}}}$$

$$\Delta y^r - \log + \Sigma n - r = 0$$

$$155$$

$$\Delta(y^r - ry + 1) + \Sigma n - r - \Delta = 0$$

$$(y-1)^r = -\frac{r}{\Delta} (n-r)$$

$$(y-1)^r = -rp (x-h)$$

$$F_2(r-\frac{1}{\Delta}, 1) = (\frac{q}{\Delta}, 1)$$

$$y=0 \Rightarrow \text{نقطه } y=0 \Rightarrow n-r=0 \Rightarrow n = \frac{r}{\frac{1}{\Delta}} \Rightarrow (\frac{r}{\Delta}, 0)$$

$$\sqrt{(\frac{q}{\Delta} - \frac{r}{\Delta})^2 + 1^2} = 1,25$$

$$\int_{\frac{1}{r}}^r \frac{r}{n^r} dn = -r \int_{\frac{1}{r}}^r \frac{-1}{n^r} dn = \left(\frac{-r}{n} \right) \Big|_{\frac{1}{r}}^r = (-1) - (-r) = r$$

سایت کنکور

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$$\begin{aligned}
 & \left\{ \begin{array}{c} 0 \\ \boxed{\begin{array}{cc} 0 & 0 \\ 0 & 0 \end{array}} \\ r^2 \end{array} \right\} \left\{ \begin{array}{c} 0 \\ \boxed{\begin{array}{ccc} 0 & 0 & 0 \\ 0 & 0 & 0 \end{array}} \\ r^2 \quad 1+r \end{array} \right\} \left\{ \begin{array}{c} 0 \\ \boxed{\begin{array}{cccc} 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{array}} \\ r^2 \quad 1+r+2 \end{array} \right\} \dots
 \end{aligned}$$

$$\underline{r^2} + (1+r+\dots+n) = 11 + \frac{n(n+1)}{2} = 11 + 24 = 35$$

نتیجه

$$g(12) = \frac{w}{r} \rightarrow f\left(\frac{w}{r}\right) = -\frac{10}{2} \neq 12 \quad \times$$

نتیجه ۱۵۴
6.3.3

$$g(10) = w \rightarrow f(w) = 0 \neq 10 \quad \times$$

$$g(18) = \frac{q}{r} \rightarrow f\left(\frac{q}{r}\right) = \frac{w}{2} \neq 18 \quad \times$$

$$g(21) = 4 \rightarrow f(4) = 21 = 21 \quad \checkmark$$

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$$P^{-1}(n) \Rightarrow x = y^r - ry - w \Rightarrow y^r - ry + 1 - 1 - w = x$$

$$\Rightarrow (y-1)^r = x + w \Rightarrow y = \sqrt[r]{x+w} + 1$$

$$\Rightarrow \sqrt[r]{x+w} + 1 = \frac{n-1}{r} \Rightarrow r\sqrt[r]{x+w} = n-1$$

$$\Rightarrow r(n-1) = x^r - ry + 1 \Rightarrow x^r - ry + 1 - r(n-1) = 0$$

$$(n-1)(n-1) = 0 \Rightarrow \begin{cases} n = 1 \\ n = 21 \end{cases}$$

از آزمون مکرر اول طبعی نداریم پس فرض میکنیم که هر دو خارج شده

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6.3.3

$$p = \frac{\binom{5}{2}}{\binom{11}{2}} = \frac{10}{55} = \frac{2}{11}$$

گزینه ۲



لکچر ارام

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