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subject: ...
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کنکور ۱۴۰۱، ۱۴۰۲

کنکور

ریاضی، فیزیک، شیمی

سنت‌های ریاضیات

$q=2 \quad 12a_1 < 100 \Rightarrow a_1 = 1, 2, 3, 4, 5, 6, 7, 8, 9$

ف ۱۰۱

$q=3 \quad 11a_1 < 100 \Rightarrow a_1 = 1$

$4+1=7$ نوع

$q=4 \rightarrow \emptyset$

$y = mx^2 - 12x + 5m - 1 \quad \min = \frac{-\Delta}{2a} = 2 \Rightarrow \Delta = -10a$

۱۰۲

$\Delta = 144 - 4m(5m-1) = -10m \Rightarrow 34 - 5m^2 + m = -2m$

ف ۱۰۲

$5m^2 - 3m - 34 = 0 \Rightarrow m = \frac{3 \pm \sqrt{9+680}}{10} = \frac{3 \pm 26}{10}$

$q = \frac{b}{2a} = \frac{4}{m} = \frac{4}{3} = 2$

$x=2$

$f(c) = a + r \quad cb = 1, r \neq ab = 1, d \neq ad \Rightarrow 1, r \neq b \neq 1, d \neq d$

ف ۱۰۳

$d = b - r \quad x \wedge \Rightarrow 10b = 12d \Rightarrow b = 12 \Rightarrow d = 10$

$cb = 1, r \neq ab \Rightarrow c = 1, r \neq a \Rightarrow f(c) = 5a \Rightarrow f(a+r) = 5a \Rightarrow a = 1$
 $b - a = 10 - 1 = 9 \quad b - a = 10$

ف ۱۰۴

$(B \cup A) \cap B = B$

$(B \cap A) \cap B = B \cap A$

$A' \cup (B \cap A) = (A' \cup B) \cap (A' \cup A) = (A' \cup B) \cap U = A' \cup B = (A \cap B)' = (A - B)'$

$((\sim p \vee q) \rightarrow q) \wedge (q \rightarrow (\sim p \vee q))$

ف ۱۰۵

$\equiv ((p \wedge \sim q) \vee q) \wedge (\sim q \vee (\sim p \vee q)) = (q \vee p) \wedge \bar{1} = p \vee q$

$x^2 + 4x + a = 0$

$3x^2 + 2\beta^2 = 12\sqrt{p} + 10$

ف ۱۰۶

$\frac{3}{x} = \frac{a}{x^2 + 4x + a} \Rightarrow \frac{a}{x} (x^2 + 4x + a) + \frac{1}{x} (x^2 - \beta^2) = \frac{a}{x} (34 - 2a) + \frac{1}{x} (4\sqrt{34 - 4a}) = 12\sqrt{p} + 10$

$9 + 9 - a + 4\sqrt{9 - a} = 12\sqrt{p} + 10 \Rightarrow \sqrt{9 - a} = 1$

$S = x + \beta = \frac{-b}{a} = -4 \quad \Delta = 34 - 2a \quad \frac{-4 \pm \sqrt{9 - a}}{1} \rightarrow \alpha = -3 - \sqrt{9 - a} \quad \beta = -3 + \sqrt{9 - a}$

$p = \alpha\beta = a$

ف ۱۰۷

$\left(\frac{1}{A+1-\sqrt{A}} - \frac{1}{A+1+\sqrt{A}} \right) = \left(\frac{2\sqrt{A}}{(A+1)^2 - A} \right)$

$a^3 = A$

$\frac{1}{A+1} + \frac{1}{A-1} = 2$

$\left(\frac{2\sqrt{A}}{A^2 + A} \right) = \left(\frac{2\sqrt{A}}{A^2 + 2A} \right) = 1$

$\frac{2A}{A^2 - 1} = 2 \Rightarrow A^2 - 1 = A \Rightarrow A^2 = A + 1$

subject:

date:

$$f(x) = x^3 \quad |x| = \begin{cases} x^3 & x \geq 0 \\ -x^3 & x < 0 \end{cases}$$

نیزه (108)

$$y = -x^3 \quad x = \sqrt[3]{-y} \quad \boxed{f^{-1}(y) = -\sqrt[3]{y}}$$

$$\sqrt{(x+3)^2 + (y-2)^2} = \sqrt{29}$$

نیزه (109)

$$x^2 + 4x + 9 + y^2 - 4y + 4 = 29 \quad (1)$$

$$\sqrt{(x+1)^2 + (y-2)^2} = 5 \Rightarrow x^2 + 2x + 1 + y^2 - 4y + 4 = 25 \quad (2)$$

(1) - (2) $\Rightarrow 1x + 1 + 4y - 12 = 0$
 $x + 4y = 11$
 $x + y = 2 \Rightarrow a = 11$

$$f(x) = \frac{\sqrt{x}}{3x - \sqrt{x}} \quad f(\sqrt{x}) = \frac{\sqrt{\sqrt{x}}}{3\sqrt{x} - \sqrt{\sqrt{x}}} = \frac{1}{\sqrt{x}}$$

نیزه (110)

$$f(f(\sqrt{x})) = f\left(\frac{1}{\sqrt{x}}\right) = \frac{\sqrt{\frac{1}{\sqrt{x}}}}{3 \times \frac{1}{\sqrt{x}} - \sqrt{\frac{1}{\sqrt{x}}}} = \sqrt{x}$$

$$f(f(f(\sqrt{x}))) = \frac{1}{\sqrt{x}} \quad \left| \frac{1}{\sqrt{x}} \right| = \frac{\sqrt{x}}{x}$$

$$\omega^x = 10$$

$$f(x) = 10$$

$$f(x) = \frac{\log 10}{\log x} = 1 + \frac{1}{\log x}$$

نیزه (111)

$$x \log 10 = \log 10 = 1$$

$$x = \frac{1}{\log 10} = \frac{1}{\log \frac{10}{x}} = \frac{1}{1 - \log x} \Rightarrow \log x = 1 - \frac{1}{x} \Rightarrow f(x) = 1 + \frac{1}{1 - \frac{1}{x}}$$

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

$$2 \cos A \sin B - \sin C$$

$$\frac{2}{\sqrt{2}} = \frac{\sqrt{2}}{1}$$

نیزه (112)

$$\sin(B+A) + \sin(B-A) - \sin C$$

$$\left(-\frac{\pi}{2}\right)$$

$$\left(\pi - C\right)$$

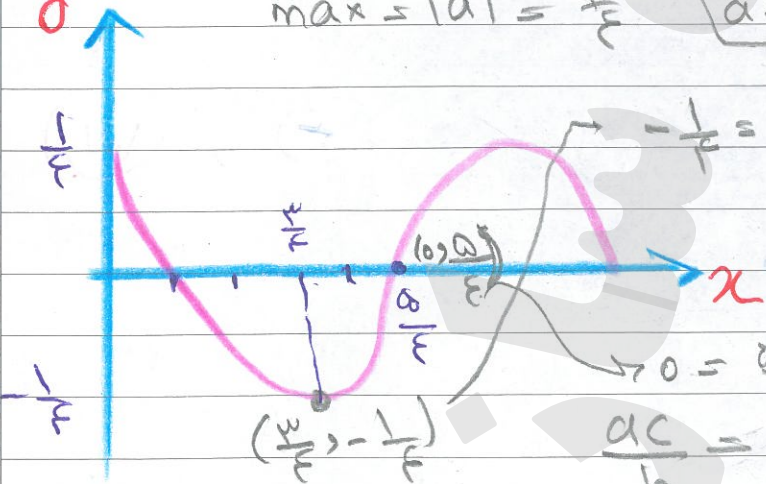
$$= \sin C - \frac{\sqrt{2}}{2} - \sin C$$

$$\begin{aligned} A &= B + \frac{\pi}{2} \\ B - A &= -\frac{\pi}{2} \\ A + B + C &= \pi \Rightarrow A + B = \pi - C \end{aligned}$$

y

$$\max = |a| = \frac{1}{\sqrt{2}} \quad \boxed{a = \frac{1}{\sqrt{2}}}$$

نیزه (113)



$$-\frac{1}{\sqrt{2}} = \frac{1}{\sqrt{2}} \cos\left(\frac{\pi}{4}b + c\right)$$

$$\frac{\pi}{4}b + c = \pi$$

$$0 = \frac{1}{\sqrt{2}} \cos\left(\frac{\pi}{4}b + c\right) \Rightarrow \frac{\pi}{4}b + c = \frac{3\pi}{4}$$

$$\frac{ac}{b} = \frac{\frac{1}{\sqrt{2}} \times \frac{\pi}{4}}{\pi} = \boxed{\frac{1}{4\sqrt{2}}}$$

subject: _____

فرستاده 114

2

$$\sin n + \sqrt{3} \cos n = \sqrt{2}$$

$$\frac{1}{\sqrt{2}} \sin n + \frac{\sqrt{3}}{\sqrt{2}} \cos n = \frac{\sqrt{2}}{\sqrt{2}}$$

$$\sin(n + \frac{\pi}{6}) = \sin \frac{\pi}{4}$$

$$\begin{aligned} x &= 2k\pi + \frac{\pi}{4} & x &= -\frac{\pi}{4} \\ & & x &= \frac{7\pi}{4} \\ x &= 2k\pi + \frac{3\pi}{4} & \rightarrow x &= \frac{3\pi}{4} \end{aligned}$$

استفاده

$$\lim_{x \rightarrow -1} \frac{\sqrt{2x+2} - \sqrt{3x+4}}{1 + \sqrt{x^2}} = \frac{1 - \frac{2}{\sqrt{2}}}{\frac{1}{\sqrt{2}}} = \boxed{\frac{3}{2}}$$

فرستاده 115

$$f(n) = \begin{cases} [x] + [-n] & |x^n| < n^n & -1 < x < 1 - \sqrt{0} \\ 1 + \pi \cos n & |n^n| < x^n \Rightarrow x = 0 \text{ or } -1 \end{cases}$$

فرستاده 116

در این است برای تمام $n \in \mathbb{Z}$ نابینا است
 پس مقدار **نامتناهی** است

فرستاده 117

$$\begin{aligned} P(x) &= 0 \Rightarrow (-x)^{3n+1} + 2(-x)^{3n} + 6x^4 + 3(-2)^9 + 14a = 0 \\ n=1 &\Rightarrow x^4 + 2x^3 + x^4 + 3x^0 + 32 = (x^2 + 2x - 3)Q + R \\ & \quad (x+3)(x-1) \end{aligned}$$

$$\begin{aligned} x=1 &\Rightarrow 1 + 2 + 1 + 3 + 32 = R(1) \Rightarrow R(1) = 39 \quad pa + b = 39 \\ x=-3 &\Rightarrow 1 - 27 + 81 + 32 = R(-3) = R(3) = 87 \quad 3a + b = 87 \end{aligned}$$

$$R = -5x + 66 \quad a = -5, b = 66$$

فرستاده 118

$$\begin{aligned} 3 - 4 & \rightarrow 4 \times 2^{10} \\ 4 - 12 & \rightarrow 4 \times 2^9 \\ 5 - 24 & \rightarrow 4 \times 2^8 + 1 \\ 4 - 8 & \rightarrow 4 \times 2^7 \\ 5 - 9 & \rightarrow 4 \times 2^6 \end{aligned}$$

$$M = 4 \times 2^{10} + 4 \times 2^9 + 1 = \boxed{4081}$$

فرستاده 119

$$\lim_{n \rightarrow +\infty} \frac{|a|n + 2n}{n + b} = \frac{(|a| + 2)x}{x} = |a| + 2 \quad \begin{cases} |a| + 2 = b \\ |a| - 2 = b \end{cases}$$

$$\lim_{n \rightarrow +\infty} \frac{|a|n + 2n}{n + b} = |a| - 2 \quad \begin{cases} a = 0 & b = -2 \\ a = -2 & b = -2 \end{cases}$$

$$\lim_{n \rightarrow +\infty} \frac{1 + 2n}{|n| - 2} = \boxed{-2}$$

subject: _____

date: _____

$$\sin m + \frac{1}{\sqrt{2}} \cos m = \frac{\sqrt{2}}{2} \sin x$$

نرتی ۲ (۱۲۰)

$$\sin m = \cos m \Rightarrow x = \frac{\pi}{4}$$

$$f(m) = \cos m - \frac{1}{\sqrt{2}} \sin m \xrightarrow{x = \frac{\pi}{4}} \frac{\sqrt{2}}{2} - \frac{1}{\sqrt{2}} \times \frac{\sqrt{2}}{2} = y = \frac{\sqrt{2}}{2}$$

$$f'(m) = \cos m - \frac{1}{\sqrt{2}} \sin m \xrightarrow{m = \frac{\pi}{4}} \frac{\sqrt{2}}{2} - \frac{1}{\sqrt{2}} \times \frac{\sqrt{2}}{2} = y = \frac{\sqrt{2}}{2}$$

$$x = \frac{\pi}{4} - \frac{\pi}{4}$$

$$g'(m) = f'(m+1) + 3 f'(3m+1)$$

نرتی ۳ (۱۲۱)

$$x = -2 \Rightarrow g'(-2) = f'(1) + 3 f'(3)$$

$$= \frac{\sqrt{2}}{2} = \sqrt{2}$$

استیجاست

$$\lim_{h \rightarrow 0} \frac{2 f(a-h) f'(a-h) + 3 f'(a-h)}{a-h}$$

نرتی ۲ (۱۲۲)

$$= \frac{-2 f(a) f'(a) + 3 f'(a)}{a} = \frac{-2 \times 2 \times \frac{20}{11} + 3 \times \frac{20}{11}}{a}$$

$$= \frac{-20}{11}$$

$$x \leq 0 \Rightarrow y = -x^3 + 3ax^2 + b \Rightarrow 1 = 1 + 3a + b$$

نرتی ۱ (۱۲۳)

$$\Rightarrow 3a + b = 0 \Rightarrow b = -3a \Rightarrow \frac{b}{a} = -3$$

$$\frac{b}{3a} = -\frac{1}{3 \left(\frac{3}{2}\right)} = -\frac{1}{3}$$

نرتی ۴ (۱۲۴)

$$\frac{a-1}{a+1} = -\frac{1}{3} \Rightarrow 3a-3 = a+1 \Rightarrow a=2$$

$$y = \frac{3x+3}{3x+1} = 0 \Rightarrow x = -\frac{3}{2}$$

$$\frac{1}{x} \times \frac{1}{x} \times \frac{1}{x} \times \frac{1}{x} \times \frac{1}{x} = 940$$

$$\frac{1}{x} \times \frac{1}{x} \times \frac{1}{x} \times \frac{1}{x} \times \frac{1}{x} = 1200 + \frac{2140}{x}$$

نرتی ۳ (۱۲۵)

subject: _____

date: _____

$P(x) = a$

$P(y) = b = \frac{1}{a}$

$P(z) = c$

$b^2 = ac = \frac{1}{a^2} \Rightarrow b = \frac{1}{a}$

$a+b+c=1 \rightarrow a+c = \frac{4}{5}, ac = \frac{1}{25}$

(2) ترتیب ۱۲۶

$Q^2 - \frac{4}{5}Q + \frac{1}{25} = 0$ $Q = \frac{\frac{4}{5} \pm \sqrt{\frac{16}{25} - \frac{4}{25}}}{2} = \frac{2 \pm \sqrt{3}}{5}$ کسرین

$P(A|B) = \frac{P(A \cap B)}{P(B)} = \frac{\frac{1}{14} \times \frac{1}{15}}{\frac{1}{4}} = \frac{1}{14}$ (3) ترتیب ۱۲۷

$\delta \sqrt{x_2} = \frac{2}{3} \delta x_1 \Rightarrow \frac{\delta}{\sqrt{x_2}} = \frac{2}{3} \frac{\delta}{\sqrt{x_1}}$ (2) ترتیب ۱۲۸

$\rightarrow \frac{\delta \sqrt{x_2}}{\delta \sqrt{x_1}} = \frac{2}{3} \Rightarrow \frac{m_2}{m_1} = \frac{9}{4} = \boxed{2, 2.25}$

$z^2 = 4 = 2 \times 2 + a^2 + b^2 \Rightarrow a^2 + b^2 = 0$ (4) ترتیب ۱۲۹

$a, b \in \mathbb{Z} \quad |a| > |b| \Rightarrow a = \pm 2, b = \pm 1$

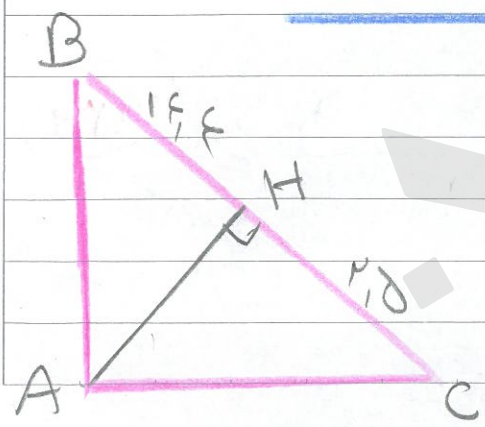
$\bar{x} = \bar{x} + 3, \bar{y} = 3, \bar{z} = 1, \bar{w} = 1, \bar{v} = 1, \bar{u} = 2$
 $\bar{x} \in \mathbb{N} \rightarrow \pm 1 \pm 2 \pm 1 \neq 0$
 $\begin{cases} 1 - 2 + 1 = 0 \\ -1 + 2 - 1 = 0 \end{cases}$ $abs = -2$

(3) ترتیب ۱۳۰

$3y + 1.8 = 1.8 \Rightarrow \boxed{y = 0}$

$2m = 1.8 - 2y \rightarrow m = 0.9 - y = \boxed{y = 0.9}$

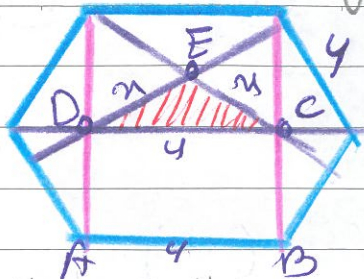
(2) ترتیب ۱۳۱



$AH^2 = BH \times HC$
 $= 10 \times 4, \quad 14 = 3y$
 $AH = y$

subject: _____

date: _____



$(n-2) \times 180 = 1260$

نرسنه (۱) ۱۳۲

$\hat{A}_1 = 120$

$\hat{D}_1 = 90 - 30 = 60$

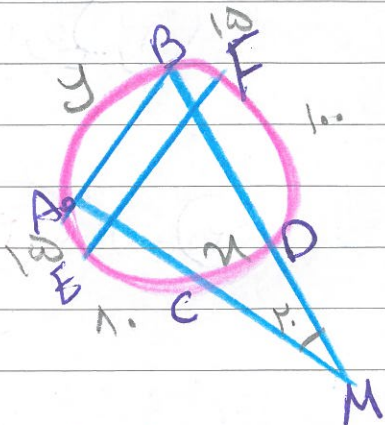
$\hat{E} = 120 \quad \hat{C} = 120$

$DC^2 = ED^2 + EC^2 - 2 \cdot ED \cdot EC \cdot \cos 60$

$34 = 2^2 + 4^2 - 2 \cdot 2 \cdot 4 \cdot \left(-\frac{1}{2}\right) \Rightarrow 34 = 4 + 16 + 8 \Rightarrow 34 = 28$

$\text{Area } S = \frac{1}{2} \cdot ED \cdot EC \cdot \sin 60 = \frac{1}{2} \cdot 2 \cdot 4 \cdot \frac{\sqrt{3}}{2}$

AB || EF $\Rightarrow \widehat{AE} = \widehat{BF} = 100$ نرسنه (۴) ۱۳۳



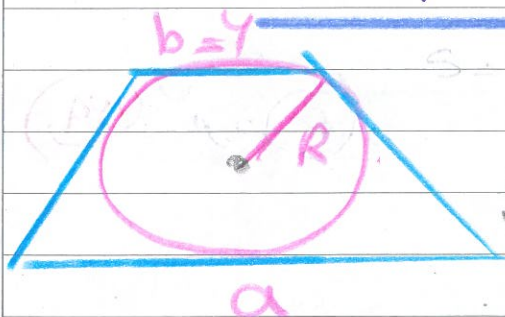
$y + 100 + 100 + x + 100 + 100 = 360$

$x + y = 160$

$M = \frac{EF - DC}{2} \Rightarrow 20 = \frac{160 + y - a}{2}$

$y - a = 20 \Rightarrow \begin{cases} y = a + 20 \\ a = 40 \end{cases} \quad B = \frac{160 + 100 + 40}{2}$

B = 150, 150



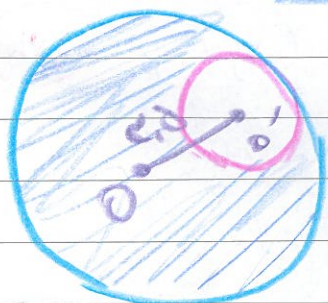
$S = \pi R^2 \Rightarrow 100\pi = \pi R^2$

$R = 10$

$(\pi R)^2 = a \cdot b \Rightarrow (\pi \cdot 10)^2 = 4a$

$a = 100$

نرسنه (۴) ۱۳۴



$OO' = R - r = 4 \Rightarrow R - r = 4$

نرسنه (۱) ۱۳۵

$\text{Area } S = \pi(R^2 - r^2)$

$21\pi = \pi(R - r)(R + r) \Rightarrow R + r = 4$

$r = 1 \Rightarrow R = 3$

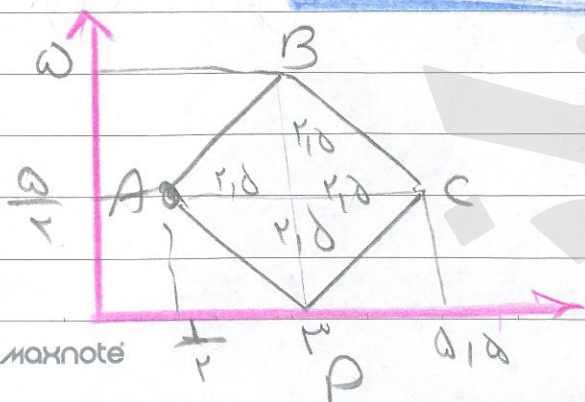
$R = 3, r = 1 \Rightarrow \boxed{R = 3, r = 1}$

$\begin{cases} R + r = 4 \\ R - r = 4 \end{cases}$

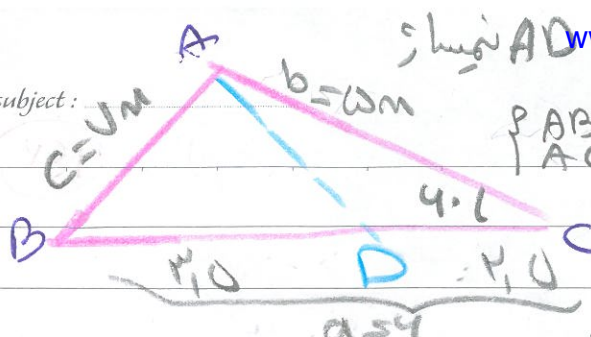
$A = \left(\frac{1}{2}, \frac{5}{2}\right)$

نرسنه (۲) ۱۳۶

$OA = \sqrt{\left(\frac{1}{2}\right)^2 + \left(\frac{5}{2}\right)^2} = \sqrt{4.5}$



subject:



$P_{AB} = VM$
 $AC = \omega n$

$\frac{AD}{DC} = \frac{AB}{AC} = \frac{10}{10}$

نرخه ۱۳۷

$c^2 = b^2 + a^2 - 2ab \cos C$
 $10^2 = 10^2 + 10^2 - 2 \cdot 10 \cdot 10 \cdot \cos \alpha$
 $\Rightarrow 2 \cos \alpha = 1 \Rightarrow \cos \alpha = \frac{1}{2}$

$\alpha = \frac{-1 \pm \sqrt{1-4}}{2} \Rightarrow \alpha = -1 \pm \sqrt{0}$
 $\alpha = -1$

$AC = \omega n = \omega \times \frac{10}{\sqrt{3}} = \frac{10}{\sqrt{3}} = \boxed{3.175}$

$AB = \begin{bmatrix} x & -1 & -x \\ 0 & 0 & 1 \\ y & z & z \end{bmatrix} \begin{bmatrix} 1z & 1 \\ 1z & 0 & -1y \\ 0 & 1 & 0 \end{bmatrix} = \begin{bmatrix} 1xz - 1z & 0 & 1x - 1y \\ 0 & 1 & 0 \\ 1yz + 1z^2 & 1z & 1y - 1z \end{bmatrix}$

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

نرخه ۱۳۸

$A = \begin{bmatrix} 1 & -1 & -1 \\ 1 & 1 & 1 \\ 1 & 1 & 1 \end{bmatrix} \begin{bmatrix} 1 & -1 & -1 \\ 1 & 1 & 1 \\ 1 & 1 & 1 \end{bmatrix} = (1 - 1 - 1) - (-1 - 1 + 1) = 3$

$\begin{bmatrix} 1 & -1 & -1 \\ 1 & 1 & 1 \\ 1 & 1 & 1 \end{bmatrix} x = \begin{bmatrix} 1 & 0 \\ 1 & 1 \\ 1 & 1 \end{bmatrix}$ $\det B = 1 - 1 = 0 \Rightarrow B^{-1} = \begin{bmatrix} 1 & -1 \\ -1 & 1 \end{bmatrix}$

$x = \begin{bmatrix} 1 & -1 \\ -1 & 1 \end{bmatrix} \begin{bmatrix} 1 & 0 \\ 1 & 1 \end{bmatrix} = \begin{bmatrix} 1 & -1 \\ -1 & 1 \end{bmatrix} \begin{bmatrix} 1 \\ 1 \end{bmatrix} = \begin{bmatrix} 0 \\ 0 \end{bmatrix}$

$m = 1 \rightarrow 3y = 1 \Rightarrow y = \frac{1}{3}$

نرخه ۱۴۰

$m = 1 \Rightarrow -2n = 4 \Rightarrow n = -2$

$R = O'A = \sqrt{(-2+1)^2 + (2-1)^2} = \sqrt{2}$
 $P = \frac{1}{\sqrt{2}} R = \boxed{\frac{1}{\sqrt{2}} \begin{bmatrix} 1 & 1 \\ 1 & -1 \end{bmatrix}}$

$f'_y = 0 \Rightarrow 2y - 2a = 0 \Rightarrow y = a$
 $f - 2a = 0 \Rightarrow a = 2$

نرخه ۱۴۱

$(-1 \pm 1) \rightarrow 2(1) - 2(2)(1) + 1(-1) + b = 0 \Rightarrow b = 10$

$\frac{a}{b} = \frac{2}{10} = \boxed{\frac{1}{5}}$

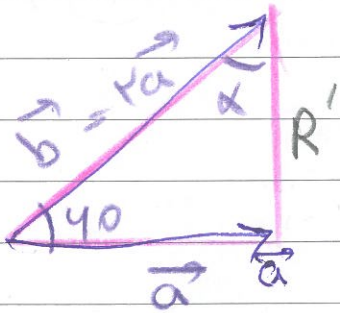
subject: _____

date: _____
 نرسنه ۴
 ۱۴۲

ببین است که بردار ارتفاع متوازی السطح باید موازی محور z
 ها باشد چون بردارها \vec{a} و \vec{b} مولفه z ندارند و در صفحه xy
 هستند

$h = (0, 0, 4)$ و $C(m, n, 4)$
 $\vec{a} \cdot \vec{e}_3 = 1 \quad m+n=1 \Rightarrow \begin{cases} m=2 \\ n=-1 \end{cases}$
 $\vec{b} \cdot \vec{C} = 5 \quad m+2n=5$
 $C(-1, 2, 4) = |C| = \sqrt{1+4+16} = \sqrt{21}$

نرسنه ۳
 ۱۴۳



می دانیم در مثل قائم الزامی ضلع
 روبروی زاویه ۳۰ نصف وتر است
 پس از \vec{a} و R' باید 90° باشد

$\alpha = 30$

نرسنه ۴
 ۱۴۴

$b = \frac{3\alpha - 1}{\alpha + 2} \Rightarrow \alpha + 2 \mid 3\alpha - 1$
 $\Rightarrow \alpha + 2 \mid 3(\alpha + 2) - 3(\alpha - 1) \Rightarrow \alpha + 2 \mid 7$

$\begin{cases} \alpha + 2 = 1 \\ \alpha + 2 = 7 \\ \alpha + 2 = -1 \\ \alpha + 2 = -7 \end{cases} \Rightarrow \alpha = -1$

نرسنه ۱
 ۱۴۵
 باینست $fa+2$ عدد زوج است و چون رقم یکا 0 و 5
 a^2-1 برابر است با a^2 هم زوج است پس a^2 فرد و a فرد است
 چون a^2 هم زوج فوالتش a^2 فرد و a فرد است
 فقولر $a=3$ و $a=5$ باشد بیان
 برابر است و a^2+a مابین 2 مابین 2
 $a=3 \Rightarrow \begin{cases} 14a+2=4 \\ a^2-1=0 \end{cases} \Rightarrow a=3$
 $a=5 \Rightarrow \begin{cases} 14a+2=4 \\ a^2-1=0 \end{cases} \Rightarrow a=5$

نرسنه ۲
 ۱۴۶

$12x + 11y = 7 \times 9 = 11 \times 49$

$\Rightarrow 12m' + y = 49$
 $1 < 12m' < 49 \Rightarrow 1 \leq m' \leq 4$

۵ جواب

subject:

date:

براف کابل $\Delta = N = P - 1$ $q = \binom{P}{2}$

نرینہ ۳ (147)

$$q = \frac{P(P-1)}{2} \Rightarrow \Delta^2 - 2\Delta = \Delta(\Delta - 2) = (P-1)(P-3)$$

$$\Rightarrow \frac{P(P-1)}{2} = (P-1)(P-3) \rightarrow \boxed{P=4}$$

۳۳۸ $P=5$ $2P-4=P$

نرینہ ۳ (148)

$$q = \frac{a + \varepsilon + \varepsilon + \eta + a + b + c}{2} = \frac{\eta}{2} \times (a + b + c)$$

$$1 + \frac{a + b + c}{2} = \frac{\eta}{2} \times (a + b + c) \quad \left\{ \begin{array}{l} a + b + c = \eta \\ a, b, c \neq 0 \end{array} \right.$$

$$\left\{ \begin{array}{l} 1 + \frac{1 + 4 + 6 + \varepsilon}{2} \\ 1 + \frac{1 + 2 + \eta}{2} \\ 1 + \frac{1 + 3 + \varepsilon}{2} \\ 2 + \frac{2 + \varepsilon}{2} \end{array} \right. \quad \left\{ \begin{array}{l} 2 + 3 + 4 \\ 1 + 2 + 3 \end{array} \right.$$

$$\boxed{126}$$

نرینہ ۳ (149)

$$a \geq 1 \quad \overline{ab} \Rightarrow a + b = \eta \Rightarrow n_2 = \binom{\eta + \eta - 1}{\eta - 1} = \eta$$

$$a \geq 1 \quad \overline{abc} \Rightarrow a + b + c = \eta \Rightarrow n_3 = \binom{\eta + \eta - 1}{\eta - 1} = \eta^2$$

$$a \geq 1 \quad \overline{abcd} \Rightarrow a + b + c + d = \eta \Rightarrow n_4 = \binom{\eta + \varepsilon - 1}{\varepsilon - 1} = 12$$

$$\left\{ \begin{array}{l} \eta \overline{abc} = a + b + c = \eta \rightarrow n_5 = 4 \times 6 \times \varepsilon \\ \eta \overline{abc} \rightarrow a + b + c = 1 \rightarrow n_6 = 3 \times 6 \times \varepsilon \end{array} \right.$$

$$n = n_1 + n_2 + n_3 + n_4 + n_5 + n_6 = n_0 - n_4 - n_6 = 1 + 1 + \eta^2 + 12 + 4 - 4 - 1 = \boxed{155}$$

$$\Lambda 000 \rightarrow n_7 = 1$$

نرینہ ۳ (150)

$$1, 2, 3, 4, 5, 6, 7$$

$$2^{\eta-1} = 2^4 + 1 = 4\varepsilon + 1 = \boxed{45}$$