

تم التحميل بواسطة مكتبة سوريا التعليمية

مناقشة سوريا التعليمية

<https://t.me/+Sb-B1aBL4eozZThk>

قناة سوريا التعليمية

<https://t.me/syriaST>

رابط بوت مكتبة سوريا التعليمية

https://t.me/SyriaST_BOT



مكتبة سوريا التعليمية



SyriaST_BOT

5. $\lim_{n \rightarrow +\infty} \frac{1}{n^2+1}$

$-1 \leq \frac{1}{n^2+1} \leq 1$

$\frac{-1}{n^2+1} \leq \frac{1}{n^2+1} \leq \frac{1}{n^2+1}$

$\lim_{n \rightarrow +\infty} \frac{1}{n^2+1} = 0$

$\lim_{n \rightarrow +\infty} \frac{1}{n^2+1} = 0$

6. $n = \frac{20 - \frac{1}{6}}{\frac{1}{6}} + 1 = 119 + 1$

$n = 120$

$S = \frac{n}{2}(a+l) = \frac{120}{2}(\frac{1}{6} + 20)$

$= 60(\frac{121}{6}) = 10(121) = 1210$

7. سؤال بدوي اجابة واحدة فقط

خاتمة f غير صفر عند (1)

8. $f'(x) = 3(x-1)^2 e^x + e^x(x-1)^3$

$= (x-1)^2 e^x [3(x-1) + 1]$

$= (x-1)^2 e^x (3x-2)$

صحة صيغة ولديه اثنان

1. $\lim_{n \rightarrow +\infty} \ln 2^n = +\infty$

2. $\ln_{n+1} = \ln(4 - U_{n+1})$

$= \ln(4 - \frac{1}{4} U_n - 3)$

$= \ln(1 - \frac{1}{4} U_n)$

$= \ln \frac{1}{4} (4 - U_n) = \ln \frac{1}{4} + \ln(4 - U_n)$

$= -\ln 4 + \ln(4 - U_n) = -\ln 4 + \ln 4$

3. $W_0 = W_0 = 3U_0 + 5V_0$

$= 3(1) + 5(2) = 13$

4. a

$b = a + r$

$c = a + 2r$

$(a+r)^2 = a(a+2r) + 4$

$a^2 + 2ar + r^2 = a^2 + 2ar + 4$

$r^2 = 4$

$r = 2$ مرفوض

$r = -2$ مقبول

نقطة التماثل

9^x + 3^{x+1} = 4 (12)

3^{2x} + 3 \cdot 3^x - 4 = 0

(3^x + 4)(3^x - 1) = 0

a: 3^x = -4 مرفوض

ب: 3^x = 1 => x = 0

e^x - e^{2x} <= 0 (13)

ب: e^x > 0

1 - e^x <= 0 => -e^x <= -1

e^x >= 1 => x >= ln(1) => x >= 0

D = [0, +\infty[(14)

f'(x) = g'(x)

e^{2x} = 2 - e^x

e^{2x} + e^x - 2 = 0

(e^x + 2)(e^x - 1) = 0

a: e^x = -2 مرفوض

ب: e^x = 1 => x = 0

f(0) = 0 - 1 = -1 => (0, -1)

g(0) = -1 => 1/2 + k = -1

k = -3/2 (15)

lim_{x -> +\infty} (2E(x) + 5x) / (x^2 + 1) (9)

x - 1 < E(x) <= x

2x - 2 <= 2E(x) <= 2x

7x - 2 <= 2E(x) + 5x <= 7x

(7x - 2) / (x^2 + 1) <= (2E(x) + 5x) / (x^2 + 1) <= 7x / (x^2 + 1)

lim_{x -> +\infty} (7x - 2) / (x^2 + 1) = lim_{x -> +\infty} 7x / (x^2 + 1) = 0

lim_{x -> +\infty} (2E(x) + 5x) / (x^2 + 1) = 0 (A)

f'(x) = 2x

m = f'(0) = 0 (A)

f(x) = \sqrt{x^2 - 2x + 4} (11)

المقام حاد اقل الجذر اقل مربع كامل

x^2 - 2x + (1)^2 - (1)^2 + 4

(x - 1)^2 + 3

y = |x - 1|

\Delta: y = -x + 1 (A)

$$\int_{e^2}^{e^2} \frac{1}{x \ln x} dx = \int_{e^2}^{e^2} \frac{1}{x} \cdot dx \quad (1.9)$$

$$= [\ln | \ln x |]_e^e = \ln 2 - \ln(1) = \ln 2 \quad (A)$$

$$\int_1^2 x e^x dx \quad (20)$$

$$u = x \rightarrow u' = 1$$

$$v' = e^x \rightarrow v = e^x$$

$$I = [x e^x]_1^2 - \int_1^2 e^x dx$$

$$= 2e^2 - e - [e^x]_1^2$$

$$= 2e^2 - e - e^2 + e = e^2 \quad (A)$$

$$\vec{u} \cdot \vec{v} = \|\vec{u}\| \cdot \|\vec{v}\| \cdot \cos(\vec{u}, \vec{v}) \quad (21)$$

$$(2, 1, 1) \cdot (1, -1, 0) = \sqrt{4+1+1} \sqrt{1+1} \cos(\vec{u}, \vec{v})$$

$$\cos(\vec{u}, \vec{v}) = \frac{2+1}{\sqrt{6} \cdot \sqrt{2}} = \frac{3}{\sqrt{12}}$$

$$= \frac{3\sqrt{12}}{12} = \frac{3 \times 2\sqrt{3}}{12} = \frac{\sqrt{3}}{2} \quad (C)$$

$$d(A, P) = \frac{|2+1-4-1|}{\sqrt{1+4+4}} = \frac{2}{\sqrt{6}} = \frac{\sqrt{6}}{3} \quad (2.2)$$

$$d(A, Q) = \frac{|2+1+2|}{\sqrt{1+1+1}} = \frac{5\sqrt{3}}{3}$$

$$f'(x) = 0 \quad (1.5)$$

$$\frac{2x-2}{2\sqrt{x^2-2x}} = 0 \rightarrow 2x-2=0$$

$x=1 \notin D$ لا يوجد هنا! مفضل! (A)

$$f(x) = e^{\frac{1}{\ln x}} \quad (1.6)$$

$$x > 0, \ln x \neq 0$$

$$]0, +\infty[\setminus \{1\}$$

$$]0, 1[\cup]1, +\infty[\quad (D)$$

$$f(x) = x^x = e^{x \ln x} \quad (1.7)$$

$$\lim_{n \rightarrow 0} f(n) = e^0 = 1 \quad (C)$$

نفس الطريقة (18)

$$\lim_{n \rightarrow -\infty} f(n) = \frac{2}{e}, \lim_{n \rightarrow +\infty} f(n) = +\infty$$

$$f'(x) = 2x e^x + e^x (x^2 + 1)$$

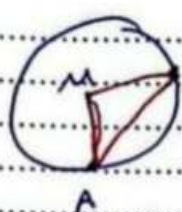
$$= e^x (x^2 + 2x + 1) = e^x (x+1)^2 \geq 0$$

$$f'(x) = 0 \rightarrow x = -1$$

$$f(-1) = \frac{2}{e} - \frac{2}{e} = 0$$

x	-1	$+$
f'	0	$+$
f	$\frac{2}{e}$	0

$$f(x) > 0 \rightarrow x \in]-1, +\infty[\quad (D)$$



26) مركز الكرة $M(x, 0, 0)$

$AM = BM$

$$\sqrt{(x-6)^2 + (-2)^2 + (-2)^2} = \sqrt{(x-4)^2 + (-4)^2 + (-1)^2}$$

نربع الطرفين

$$x^2 - 12x + 36 + 4 + 4 = x^2 - 8x + 16 + 16 + 1$$

$$-4x = -8 \Rightarrow x = 2$$

$$R = AM = \sqrt{(-4)^2 + (-2)^2 + (-2)^2} = \sqrt{24}$$

$$= 4\sqrt{6}$$

B

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$$2 = at + 1 \quad \text{--- (1)}$$

$$5 = 3t + 2 \quad \text{--- (2)}$$

$$2 = 2t \quad \text{--- (3)}$$

$$\Rightarrow t = 1$$

نفس الطريقة

$$2 = a + 1 \Rightarrow a = 1$$

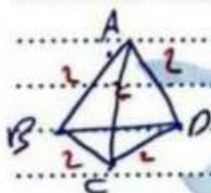
D

$$AM = MB$$

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مستوي π موجود في القطعة المستقيمة $[AB]$

D



$$\vec{AB} \cdot \vec{CD}$$

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$$= \vec{AB} \cdot (\vec{CA} + \vec{AD})$$

$$= \vec{AB} \cdot \vec{CA} + \vec{AB} \cdot \vec{AD}$$

$$= -\vec{AB} \cdot \vec{AC} + \vec{AB} \cdot \vec{AD}$$

$$= -\|\vec{AB}\| \cdot \|\vec{AC}\| \cos \frac{\pi}{2} + \|\vec{AB}\| \cdot \|\vec{AD}\| \cos \frac{\pi}{2}$$

$$= -2 \cdot 2 \cdot 2 \cdot \frac{1}{2} + 2 \cdot 2 \cdot 2 \cdot \frac{1}{2} = 0$$

D

سواء مركزية - فيينا محور 2. كبر

$$d^2 = \left(\frac{\sqrt{6}}{3}\right)^2 + \left(\frac{5\sqrt{3}}{2}\right)^2$$

$$d^2 = \frac{6}{9} + \frac{75}{9} \Rightarrow d^2 = 9$$

$$d = 3$$

B

$$(\vec{u} + \vec{v}) \cdot (\vec{u} - \vec{v}) = 0$$

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$$\|\vec{u}\|^2 - \|\vec{v}\|^2 = 0 \Rightarrow \|\vec{u}\| = \|\vec{v}\|$$

A

$$(c, v), (B, v), (A, v) \text{ و } G$$

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$$(0, 3)$$

$$\|\vec{AM} + \vec{BM} + \vec{CM} + 3\vec{DM}\| = 12$$

$$\|6 \cdot \vec{GM}\| = 12$$

$$\|\vec{GM}\| = 2$$

كرة مركزها G ونصف قطرها (2)

D

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$$\vec{AB} \cdot \vec{u} = 0$$

$$(-1-x, y-5, -4) \cdot (1, 1, -2) = 0$$

$$-1-x+y-5+8=0$$

$$-x+y+2=0 \quad \text{--- (1)}$$

$$\vec{AB} \cdot \vec{v} = 0$$

$$(-1-x, y-5, -4) \cdot (3, -1, -1) = 0$$

$$-3-3x-y+5+4=0$$

$$-3x-y+6=0 \quad \text{--- (2)}$$

$$\text{(1) + (2)} \quad -4x + 8 = 0 \Rightarrow x = 2$$

نفس الطريقة

$$-2 + y + 2 = 0 \Rightarrow y = 0$$

B

نضرب بـ i

$$-\bar{z} = 2i - 1$$

$$\bar{z} = 1 - 2i$$

$$\boxed{\bar{z} = 1 + 2i} \quad \text{C}$$

$$\arg(-iz) = -\pi \quad \text{33}$$

$$\arg(-i) + \arg(z) = -\pi$$

$$\frac{-\pi}{2} \leftarrow \arg z = -\pi + \frac{\pi}{2}$$

$$\arg(z) = -\frac{\pi}{2} \quad \text{33}$$

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$$w + \bar{w} = \frac{-i\bar{z} - 1}{\bar{z} - i} + \frac{i z - 1}{z + i}$$

$$= \frac{(-i\bar{z} - 1)(z + i) + (i z - 1)(\bar{z} - i)}{(\bar{z} - i)(z + i)}$$

$$(\bar{z} - i)(z + i)$$

$$= \frac{-i\bar{z}z + \bar{z} - z - i + i\bar{z}z + z - \bar{z} + i}{(\bar{z} - i)(z + i)} = 0 \quad \text{C}$$

$$a - a^6 = e^{\frac{i2\pi}{7}} - e^{\frac{i12\pi}{7}} \quad \text{35}$$

$$= e^{\frac{i2\pi}{7}} - e^{\frac{i(4\pi - 2\pi)}{7}}$$

$$= e^{\frac{i2\pi}{7}} - e^{i(2\pi - \frac{2\pi}{7})}$$

$$= e^{\frac{i2\pi}{7}} - e^{-\frac{i2\pi}{7}}$$

$$= 2i \sin \frac{2\pi}{7} \quad \text{B}$$

$$\bar{w} = \lambda \bar{u} + \mu \bar{v} \quad \text{30}$$

$$(5, 3, 4) = \lambda(1, 2, 1) + \mu(3, 1, 4)$$

$$5 = \lambda + 3\mu \quad \text{1}$$

$$3 = 2\lambda - \mu \quad \text{2}$$

$$4 = \lambda + 4\mu \quad \text{3}$$

$$\lambda = 5 - 3\mu$$

$$3 = 10 - 6\mu - \mu \Rightarrow 7\mu = 7$$

$$\mu = 1$$

$$\lambda = 5 - 3 = 2$$

$$d = 2 + 4 = 6 \quad \text{A}$$

$$z\bar{z} - \bar{z} = 3 - 3i \quad \text{31}$$

$$z = x + iy \quad 2x + 2iy - (x - iy) = 3 - 3i$$

$$2x + 2iy - x + iy = 3 - 3i$$

$$x + 3iy = 3 - 3i$$

$$x = 3 \text{ و } 3y = -3 \Rightarrow y = -1$$

$$\boxed{z = 3 - i} \quad \text{B}$$

$$(2i - iz) = |1 + \sqrt{3}i| - i \quad \text{32}$$

$$-2i + i\bar{z} = \sqrt{1+3} - i = -i$$

$$i\bar{z} = 2 - i + 2i$$

$$i\bar{z} = 2 + i$$

نصف 2

$$n \times \frac{2}{3} = 2 \Rightarrow n = 3$$

A

$$E(X) = 1.3$$

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x_i	0	1	2	3
P_i	α	β	0.3	0.2

$$\alpha + \beta + 0.3 + 0.2 = 1$$

$$\Rightarrow \alpha + \beta = 0.5 \quad \text{--- 1}$$

$$E(X) = 1.3$$

$$\Rightarrow 0 + \beta + 0.6 + 0.6 = 1.3$$

$$\Rightarrow \beta = 0.1 \quad \text{--- 2}$$

نصف 1

$$\alpha + 0.1 = 0.5 \Rightarrow \alpha = 0.4$$

B

انتهى من المفروض
الاستراتيجية
مع كتيبات المدرس
حسين رشيد

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$$\binom{17}{7} + \binom{17}{8} = \binom{18}{8}$$

A

$$\binom{n}{r-1} + \binom{n}{r} = \binom{n+1}{r}$$

$$S = \{1, 2, \dots, r\}$$

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مجموع ثلاثة عناصر زوجي
! ما عناصر زوجي
او عنصرين فردين وعنصرين زوجيين

$$\text{عدد الطرق} = \binom{4}{3} + \binom{5}{2} \times \binom{4}{1}$$

$$= 4 + 10 \times 4 = 44$$

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

$$= P(A) + P(B) - P(A) \times P(B)$$

سبب الاستقلال

$$= \frac{1}{4} + \frac{1}{3} - \frac{1}{4} \times \frac{1}{3}$$

$$= \frac{7}{12} - \frac{1}{12} = \frac{6}{12} = \frac{1}{2}$$

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$$V(X) = \frac{2}{3}, E(X) = 2$$

$$E(X) = n \cdot p \Rightarrow n \cdot p = 2 \quad \text{--- 1}$$

$$V(X) = n \cdot p \cdot q \Rightarrow n \cdot p \cdot q = \frac{2}{3} \quad \text{--- 2}$$

نصف 1 في 2

$$2 \cdot q = \frac{2}{3} \Rightarrow q = \frac{1}{3}$$

$$p = \frac{2}{3}$$

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