

تقريب عدد

أجب بـ "صحيح" أو "خطأ"

(1) العدد $3\sqrt{3}^0$ يساوي 1

خطأ

$$3\sqrt{3}^0 = 3 \times 1 = 3$$

خطأ

(2) العدد $\left(-\frac{2}{\sqrt{3}}\right)^{-3}$ يساوي $\frac{3\sqrt{3}}{8}$

$$\left(-\frac{\sqrt{3}}{2}\right)^3 = -\frac{3\sqrt{3}}{8}$$

جواب

(3) العدد $\sqrt{3}^{-3} + \sqrt{3}^{-3} + \sqrt{3}^{-3}$ يساوي $\frac{\sqrt{3}}{3}$

$$\sqrt{3}^{-3} + \sqrt{3}^{-3} + \sqrt{3}^{-3} = 3 \times \sqrt{3}^{-3}$$

$$= 3 \times \frac{1}{3\sqrt{3}} = \frac{1}{\sqrt{3}} = \frac{\sqrt{3}}{3}$$

تقريب عدد

(1) أحسب العبارات التالية

$$A = -3\sqrt{5}^{-2} + (-5\sqrt{2})^{-2} - \frac{21}{50}$$

$$= -\frac{3}{5} + \frac{1}{50} - \frac{21}{50}$$

$$= \frac{-30 + 1 - 21}{50}$$

$$A = -1$$

$$B = \frac{(0,1)^5 \times \sqrt{2}^3}{(0,005)^2 \times \sqrt{5}^{-3}} - \sqrt{160}$$

$$= \frac{(10^{-1})^5 \times \sqrt{2}^3 \times \sqrt{5}^3}{(5 \times 10^{-3})^2} - 4\sqrt{10}$$

$$= \frac{10^{-5}}{25 \times 10^{-6}} \times 10\sqrt{10} - 4\sqrt{10}$$

$$= \frac{100\sqrt{10}}{25} - 4\sqrt{10}$$

$$= 4\sqrt{10} - 4\sqrt{10}$$

$$\Rightarrow B = 0$$



(2) أكتب في صيغة قوة عدد حقيقي دليها مخالف لـ 1 كلاً من العبارات التالية

$$E = \left(\frac{2}{\sqrt{3}}\right)^{18} \times \left(\frac{\sqrt{3}}{2}\right)^{-12}$$

$$= \left(\frac{2}{\sqrt{3}}\right)^{18} \times \left(\frac{2}{\sqrt{3}}\right)^{12}$$

$$= \left(\frac{2}{\sqrt{3}}\right)^{30} \Rightarrow E = \left(\frac{2\sqrt{3}}{3}\right)^{30}$$

$$F = \left(\frac{\sqrt{7}}{3}\right)^{-4} \times \left(\frac{6}{\sqrt{7}}\right)^{-4}$$

$$= \left(\frac{\sqrt{7}}{3} \times \frac{6}{\sqrt{7}}\right)^{-4}$$

$$= 2^{-4} \Rightarrow F = \left(\frac{1}{2}\right)^4$$

$$G = \frac{5^{-4} \times 3}{3^{-5} \times \left(\frac{1}{5}\right)^4}$$

$$= \frac{5^{-4} \times 3}{3^{-5} \times 5^{-4}}$$

$$= 3 \times 3^5$$

$$G = 3^6$$

$$H = \frac{81}{25} \times \left(-\frac{3}{\sqrt{5}}\right)^{-7}$$

$$= \frac{3^4}{5^2} \times \left(-\frac{3}{\sqrt{5}}\right)^{-7}$$

$$= \frac{3^4}{5^2} \times \left(-\frac{3}{\sqrt{5}}\right)^{-7}$$

$$= \left(-\frac{3}{\sqrt{5}}\right)^4 \times \left(-\frac{3}{\sqrt{5}}\right)^{-7}$$

$$= \left(-\frac{3}{\sqrt{5}}\right)^{-3} \Rightarrow H = \left(-\frac{\sqrt{5}}{3}\right)^3$$

$$\left(\sqrt{3}\right)^{-8} \times \left(\frac{1}{\sqrt{3}}\right)^{-6} = \sqrt{3}^{-8} \times \sqrt{3}^6$$

$$= \sqrt{3}^{-2} = \left(\frac{1}{\sqrt{3}}\right)^2 = \left(\frac{\sqrt{3}}{3}\right)^2$$

$$9\sqrt{3} \times (\sqrt{2})^5 = 3^2\sqrt{3} \times \sqrt{2}^5$$

$$= \sqrt{3}^5 \times \sqrt{2}^5$$

$$= \sqrt{6}^5$$

$$\frac{4\sqrt{2}}{3^5} = \frac{\sqrt{2}^4 \times \sqrt{2}}{3^5} = \frac{\sqrt{2}^5}{3^5}$$

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

$$\frac{(\sqrt{3})^{-5}}{(\sqrt{3})^4} = \sqrt{3}^{-5} \times \sqrt{3}^{-4} = \sqrt{3}^{-9}$$

$$= \left(\frac{1}{\sqrt{3}}\right)^9 = \left(\frac{\sqrt{3}}{3}\right)^9$$

لتكن العبارة التالية $C = \frac{(a^{-3}b^{-4})^2 \times (a^2b^{-3})}{(a^{-2}b^{-3})^3 \times a^4}$ حيث a و b عدنان حقيقيان مخالفان للصفر

$$C = \frac{a^{-6} \times b^{-8} \times a^2 \times b^{-3}}{a^{-6} \times b^{-9} \times a^4} = b^{-11} \times b^9 \times a^2 \times a^{-4} \Rightarrow C = a^{-2}b^{-2}$$

مع أحسب C في حالة a مقلوب b :

$$C = a^{-2} \times b^{-2} = (a \times b)^{-2}$$

$$C = 1$$

تسرين عتيد

ضع علامة (✓) أمام المقترح الصحيح

1 العدد $\sqrt{2}^{2025} + \sqrt{2}^{2025} + \sqrt{2}^{2025} + \sqrt{2}^{2025}$ يساوي

☐ $(4\sqrt{2})^{2025}$ ☒ $\sqrt{2}^{2029}$ ☐ $\sqrt{2}^{8100}$

$$\begin{aligned} \sqrt{2}^{2025} + \sqrt{2}^{2025} + \sqrt{2}^{2025} + \sqrt{2}^{2025} &= 4\sqrt{2}^{2025} \\ &= 2^2 \sqrt{2}^{2025} \\ &= \sqrt{2}^4 \times \sqrt{2}^{2025} \\ &= \sqrt{2}^{2029} \end{aligned}$$

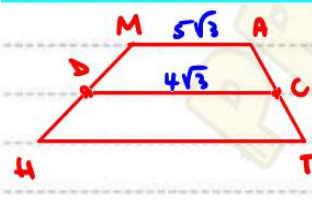
2 العدد $(2\sqrt{2}-3)^{-2024} \times (2\sqrt{2}+3)^{-2025}$ يساوي

☐ $2\sqrt{2}-3$ ☒ $(3-2\sqrt{2})/3$ ☐ -1

$$\begin{aligned} A &= (2\sqrt{2}-3)^{-2024} \times (2\sqrt{2}+3)^{-2024} \times (2\sqrt{2}+3)^{-1} \\ &= [(2\sqrt{2}-3)(2\sqrt{2}+3)]^{-2024} \times \frac{1}{2\sqrt{2}+3} \\ &= (-1)^{-2024} \times \frac{1}{2\sqrt{2}+3} = -\frac{1}{(2\sqrt{2}+3)(2\sqrt{2}-3)} = \frac{-2\sqrt{2}+3}{3} \end{aligned}$$

3 MATH شبه منحرف قاعدته [TH] و [MA] و C منتصف [AT] و D منتصف [HM] حيث $AM = \sqrt{75}$ و $CD = \sqrt{48}$ فإن TH يساوي :

☒ $\sqrt{3}^3$ ☐ $\frac{11}{2}\sqrt{3}$ ☐ $11\sqrt{3}$



$$\begin{aligned} DC &= \frac{AM + TH}{2} \Rightarrow 2DC = AM + TH \\ &\Rightarrow TH = 2 \times DC - AM \\ &= 2 \times 4\sqrt{3} - 5\sqrt{3} \Rightarrow TH = 3\sqrt{3} = \sqrt{3}^3 \end{aligned}$$

4 إذا كان $M \in [AB]$ حيث $3AM = \sqrt{3}BM$ فإن

☐ $AM = \frac{\sqrt{3}-1}{2} AB$ ☐ $AM = \frac{\sqrt{3}}{3} AB$ ☒ $BM = \frac{\sqrt{3}}{3} AM$

$$\frac{AM}{BM} = \frac{\sqrt{3}}{3} \Rightarrow BM = \frac{3}{\sqrt{3}} AM \Rightarrow BM = \sqrt{3} AM$$

$$(a+b)^2 = a^2 + 2ab + b^2$$

تذكير

$$(a-b)^2 = a^2 - 2ab + b^2$$

$$(a-b)(a+b) = a^2 - b^2$$

مراجعة

أنشرثم اختصرالعبارات التالية حيث $x \in \mathbb{R}^*$

$$A \left(\frac{3x}{2} + \sqrt{5} \right)^2 + \left(\frac{3x}{2} - \sqrt{5} \right)^2 \quad B \left(x\sqrt{7} - \sqrt{2} \right)^2 - \left(x\sqrt{7} + \sqrt{2} \right)^2 \quad C \left(\sqrt{3}x - 1 \right)^2 - \left(\sqrt{3}x - 1 \right)^2$$

$$A = \left(\frac{3x}{2} + \sqrt{5} \right)^2 + \left(\frac{3x}{2} - \sqrt{5} \right)^2$$

$$= \frac{9}{4}x^2 + 3\sqrt{5}x + 5 + \frac{9}{4}x^2 - 3\sqrt{5}x + 5$$

$$= \frac{18}{4}x^2 + 10$$

$$A = \frac{9}{2}x^2 + 10$$

$$A \left(\frac{3x}{2} + \sqrt{5} \right)^2 + \left(\frac{3x}{2} - \sqrt{5} \right)^2 \quad B \left(x\sqrt{7} - \sqrt{2} \right)^2 - \left(x\sqrt{7} + \sqrt{2} \right)^2 \quad C \left(\sqrt{3}x - 1 \right)^2 - \left(\sqrt{3}x - 1 \right)^2$$

$$B = \left(x\sqrt{7} - \sqrt{2} \right)^2 - \left(x\sqrt{7} + \sqrt{2} \right)^2$$

$$= (7x^2 - 2\sqrt{14}x + 2) - (7x^2 + 2\sqrt{14}x + 2)$$

$$= 7x^2 - 2\sqrt{14}x + 2 - 7x^2 - 2\sqrt{14}x - 2$$

$$B = -4\sqrt{14}x$$

$$A \left(\frac{3x}{2} + \sqrt{5} \right)^2 + \left(\frac{3x}{2} - \sqrt{5} \right)^2 \quad B \left(x\sqrt{7} - \sqrt{2} \right)^2 - \left(x\sqrt{7} + \sqrt{2} \right)^2 \quad C \left(\sqrt{3}x - 1 \right)^2 - \left(\sqrt{3}x - 1 \right)^2$$

$$C = \left(\sqrt{3}x - 1 \right)^2 - \left(\sqrt{3}x - 1 \right)^2 = 0$$

$$= 3x^2 - 2\sqrt{3}x + 1 - (3x^2 - 2\sqrt{3}x + 1)$$

$$= 3x^2 - 2\sqrt{3}x + 1 - 3x^2 + 2\sqrt{3}x - 1$$

$$C = 0$$

$$D \left(\sqrt{5x} - \frac{\sqrt{5}}{2} \right)^2 - \left(\frac{5x}{\sqrt{5}} + \sqrt{5} \right)^2 \quad E (2x\sqrt{5} + \sqrt{2x})(2x\sqrt{5} - \sqrt{2x}) \quad F (\sqrt{2x} - \sqrt{8})^2 - (\sqrt{2x} + 1)^2$$

$$\begin{aligned} D &= \left(\sqrt{5x} - \frac{\sqrt{5}}{2} \right)^2 - \left(\frac{5x}{\sqrt{5}} + \sqrt{5} \right)^2 \\ &= 5x^2 - 5x + \frac{5}{4} - \left(5x^2 + 10x + 5 \right) \\ &= 5x^2 - 5x + \frac{5}{4} - 5x^2 - 10x - 5 \end{aligned}$$

$$D = -15x - \frac{15}{4}$$

$$D \left(\sqrt{5x} - \frac{\sqrt{5}}{2} \right)^2 - \left(\frac{5x}{\sqrt{5}} + \sqrt{5} \right)^2 \quad E (2x\sqrt{5} + \sqrt{2x})(2x\sqrt{5} - \sqrt{2x}) \quad F (\sqrt{2x} - \sqrt{8})^2 - (\sqrt{2x} + 1)^2$$

$$\begin{aligned} E &= (2x\sqrt{5} + \sqrt{2x})(2x\sqrt{5} - \sqrt{2x}) \\ &= (2x\sqrt{5})^2 - (\sqrt{2x})^2 \end{aligned}$$

$$E = 20x^2 - 2x$$

$$D \left(\sqrt{5x} - \frac{\sqrt{5}}{2} \right)^2 - \left(\frac{5x}{\sqrt{5}} + \sqrt{5} \right)^2 \quad E (2x\sqrt{5} + \sqrt{2x})(2x\sqrt{5} - \sqrt{2x}) \quad F (\sqrt{2x} - \sqrt{8})^2 - (\sqrt{2x} + 1)^2$$

$$\begin{aligned} F &= (\sqrt{2x} - \sqrt{8})^2 - (\sqrt{2x} + 1)^2 \\ &= 2x - 2\sqrt{2x} \times \sqrt{8} - 8 - (2x^2 + 2\sqrt{2}x + 1) \\ &= 2x - 8\sqrt{x} - 8 - 2x^2 - 2\sqrt{2}x - 1 \end{aligned}$$

$$F = -2x^2 + 2x - 8\sqrt{x} - 2\sqrt{2}x - 9$$

$$G (\sqrt{2} - \sqrt{10})^2 + (\sqrt{5} + \sqrt{2})(\sqrt{2} - \sqrt{5}) - (1 - \sqrt{5})^2$$

$$\begin{aligned} &= 2 - 2\sqrt{20} + 10 + (2 - 5) - (1 - 2\sqrt{5} + 5) \\ &= 12 - 4\sqrt{5} - 3 - 6 + 2\sqrt{5} \end{aligned}$$

$$G = 3 - 2\sqrt{5}$$

مرحبا بكم علي منصة مراجعة



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