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33. Simplify : $\frac{0.728 \times 0.728 - 0.272 \times 0.272}{0.456}$

(A) 0.456

☒ (B) 1

(C) 0.728

(D) 0.272

சுருக்குக : $\frac{0.728 \times 0.728 - 0.272 \times 0.272}{0.456}$

(A) 0.456

(B) 1

(C) 0.728

(D) 0.272

VIDEOS

33) simplify: $\frac{0.728 \times 0.728 - 0.272 \times 0.272}{0.456}$

Assume $a = 0.728$, $b = 0.272$.

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$$\frac{(a \times a) - (b \times b)}{0.456} = \frac{a^2 - b^2}{0.456} = \frac{(a+b)(a-b)}{0.456}$$

$$= \frac{(0.728 + 0.272)(0.728 - 0.272)}{0.456}$$

$$= \frac{1 \times 0.456}{0.456} = 1$$

Answer = 1 (option b)

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34. If $\frac{x}{y} = \frac{3}{5}$, then $\frac{5x+2y}{5x-2y}$ is equal to

(A) 3

☒ (B) 5

(C) $\frac{2}{5}$

(D) $\frac{5}{2}$

$\frac{x}{y} = \frac{3}{5}$ எனில் $\frac{5x+2y}{5x-2y}$ என்பது எதற்குச் சமம்

(A) 3

(B) 5

(C) $\frac{2}{5}$

(D) $\frac{5}{2}$

VIDEOS

34) $\frac{x}{y} = \frac{3}{5}$, Then $\frac{5x+2y}{5x-2y} = ??$

$$\frac{5x+2y}{5x-2y} = \frac{(5 \times 3) + (2 \times 5)}{(5 \times 3) - (2 \times 5)} = \frac{15+10}{15-10} = \frac{25}{5}$$

Answer = 5 option b)

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TELEGRAM

36. Find the value of $\frac{1.2 \times 1.2 \times 1.2 - 0.2 \times 0.2 \times 0.2}{1.2 \times 1.2 + 1.2 \times 0.2 + 0.2 \times 0.2}$

- (A) 1.2 ☒ (B) 1 (C) 0.2 (D) 1.4

$$\frac{1.2 \times 1.2 \times 1.2 - 0.2 \times 0.2 \times 0.2}{1.2 \times 1.2 + 1.2 \times 0.2 + 0.2 \times 0.2}$$

—ன் மதிப்பைக் காண

- (A) 1.2 (B) 1 (C) 0.2 (D) 1.4

TELEGRAM

$$36) \frac{1.2 \times 1.2 \times 1.2 - 0.2 \times 0.2 \times 0.2}{1.2 \times 1.2 + 1.2 \times 0.2 + 0.2 \times 0.2}$$

$$a = 1.2, \quad b = 0.2$$

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$$\frac{(a \times a \times a) - (b \times b \times b)}{(a \times a) + (a \times b) + (b \times b)} = \frac{a^3 - b^3}{(a^2 + ab + b^2)}$$

$$= \frac{(a-b)(a^2 + ab + b^2)}{(a^2 + ab + b^2)} = (a-b)$$

$$= 1.2 - 0.2 = 1$$

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Answer = 1 option b)

TELEGRAM

155. If $a^x = b$, $b^y = c$, $c^z = a$, then what is the value of xyz ?

- (A) 3 (B) 4 (C) 9

$a^x = b$, $b^y = c$, $c^z = a$ எனில் xyz -ன் மதிப்பு என்ன?

- (A) 3 (B) 4 (C) 9



1

FREE TEST

(D) 1

GS0811

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ω

155) If $a^x = b$, $b^y = c$, $c^z = a$, $xyz = ??$

$$a^x = b, \quad b^y = c$$

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$$b^y = (a^x)^y = a^{xy} = c$$

$$c^z = a \Rightarrow c = a^{1/z}$$

FREE TEST

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$$\left. \begin{array}{l} a^{xy} = c \\ a^{1/z} = c \end{array} \right\} \Rightarrow a^{xy} = a^{1/z}$$

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$$xy = \frac{1}{z} \Rightarrow \boxed{xyz = 1}$$

Answer = 1 (option D)

FREE TEST

173. Mala and Latha each had a number of bangles. Mala said to Latha "If you give me 4 of your bangles, my number will be thrice yours". Latha replied "If you give me 36, my number will be thrice yours". What is the total bangles together with them?

(A) 70

☒ (B) 80

(C) 90

(D) 100

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மாலாவிடமும், லதாவிடமும் வளையல்கள் உள்ளன. "நீ எனக்கு 4 வளையல்களைத் தந்தால் என்னிடம் உள்ள வளையல்களின் எண்ணிக்கை உன்னிடம் உள்ளதைப் போல் மூன்று மடங்கு என மாலா, லதாவிடம் கூறினாள். நீ எனக்கு 36 வளையல்களைத் தந்தால் என்னிடம் உள்ள வளையல்களின் எண்ணிக்கை உன்னிடம் உள்ளதைப் போல மூன்று மடங்காகும்" என லதா பதிலளித்தார் எனில் இருவரிடமும் சேர்ந்து மொத்தம் உள்ள வளையல்களின் எண்ணிக்கை எவ்வளவு?

(A) 70

(B) 80

(C) 90

(D) 100

173) Mala and Latha.

mala to Latha $\Rightarrow$

number of mala bangles = M.

No. of Latha bangles = L.

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$$M + L = ??$$

$$(M+4) = 2(L-4) \text{ --- ①}$$

$$3(M-36) = (L+36) \text{ --- ②}$$

$$M+4 = 3L-12$$

$$3M-108 = L+36$$

$$M-3L = -12-4 = -16$$

$$3M-L = 108+36 = 144$$

$$\begin{array}{r} 108 \\ 36 \\ \hline 144 \end{array}$$

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$$M - 3L = -16 \quad \text{--- (1)}$$

$$3M - L = 144 \quad \text{--- (2)}$$

x3

$$\begin{array}{r} 3M - 9L = -48 \\ 3M - L = 144 \\ \hline (-) \quad (+) \quad (-) \\ -8L = -192 \end{array}$$

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$$L = \frac{-192}{-8} = 24 \Rightarrow \boxed{L = 24}$$

$$3M - L = 144 \Rightarrow 3M = 144 + L = 144 + 24$$

$$M = \frac{168}{3} = 56$$

$$\boxed{L + M = 24 + 56 = 80 \text{ (option B)}}$$

TELEGRAM

159. If $ax^2 - 28x + 49 = 0$ has equal roots. Then the value of a is

(A) 1

(B) 2

(C) 3

(D) 4

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$ax^2 - 28x + 49 = 0$ என்ற சமன்பாட்டின் மூலங்கள் சமம் எனில் a ன் மதிப்பு

(A) 1

(B) 2

(C) 3

(D) 4

159) $ax^2 - 28x + 49 = 0$. - இரண்டு மூலம் உள்ளது.

$d = ??$ இரண்டு மூலம், $b^2 - 4ac = 0$.

$a = a, b = -28, c = 49$.

$(-28)^2 - 4 \times a \times 49 = 0$.

$196 - 196a = 0 \Rightarrow a = \frac{196}{196} = 1$.

161. In a two digit number, the digit in the unit place is twice of the digit in the tenth place. If the digits are reversed, the new number is 27 more than the given number. Find the number.

(A) 63

 (B) 36

(C) 93

(D) 39

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ஓர் ஈரிலக்க எண்ணில், ஒன்றாம் இட இலக்க எண், பத்தாம் இட இலக்க எண்ணைப்போல் இரு மடங்காக உள்ளது. இலக்கங்கள் இடம் மாறினால் கிடைக்கும் புதிய எண் கொடுக்கப்பட்ட எண்ணைவிட 27 அதிகம் எனில் கொடுக்கப்பட்ட ஈரிலக்க எண்ணைக் கண்டுபிடிக்க.

(A) 63

(B) 36

(C) 93

(D) 39

WEBSITE

161) മിസ്റ്റർ നട്ടിനക്കുട് നാൽപ്പതു xy നാൽപ്പതു.

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

Reverse the digits: Number: yx

$$\boxed{yx = xy + 27}$$

Ex: $21 = (2 \times 10) + 1$

$$xy = (x \times 10) + y = \underline{10x + y}$$

$$yx = 10y + x$$

$$\rightarrow 10y + x = 10x + y + 27$$

$$10y - y = 10x - x + 27$$

$$9y = 9x + 27$$

$$\div 9 \Rightarrow \boxed{y = x + 3} \quad 2x = x + 3$$

$$x = 3, y = 2 \times 3 = 6$$

$$\boxed{\text{That number} = 36} \text{ (ans)}$$

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166. Simplify the following:

$$\frac{x^3}{x-2} + \frac{8}{2-x}$$

(A) $x^2 - 2x + 4$

(C) $x^2 - 2x - 4$

 (B) $x^2 + 2x + 4$

(D) $x^2 + 2x - 4$

சுருக்கம்: $\frac{x^3}{x-2} + \frac{8}{2-x}$

(A) $x^2 - 2x + 4$

(C) $x^2 - 2x - 4$

(B) $x^2 + 2x + 4$

(D) $x^2 + 2x - 4$

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INSTAGRAM

166) Simplify:

$$\frac{x^3}{x-2} + \frac{8}{2-x} = \frac{x^3}{x-2} - \frac{8}{x-2}$$

$$= \frac{x^3 - 8}{(x-2)} = \frac{x^3 - 2^3}{(x-2)}$$

$$= \frac{\cancel{(x-2)} \times (x^2 + 2x + 4)}{(\cancel{x-2})}$$

Answer = $x^2 + 2x + 4$ (option B)

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167. Simplify : $\frac{m}{m+1} + \frac{1}{m+1} + \frac{1}{m^2-1}$

(A) m^2

(B) $\frac{m^2-1}{m^2}$

(C) $\frac{1}{m^2}$

(D) $\frac{m^2}{m^2-1}$

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சுருக்குக : $\frac{m}{m+1} + \frac{1}{m+1} + \frac{1}{m^2-1}$

(A) m^2

(B) $\frac{m^2-1}{m^2}$

(C) $\frac{1}{m^2}$

(D) $\frac{m^2}{m^2-1}$

INSTAGRAM

167) simplify: $\frac{m}{m+1} + \frac{1}{m+1} + \frac{1}{m^2-1}$

$$\frac{m}{m+1} + \frac{1}{m+1} = \frac{m+1}{m+1} = 1$$

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$$1 + \frac{1}{m^2-1} = \frac{m^2-1+1}{m^2-1} = \frac{m^2}{m^2-1} \text{ option D)}$$

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INSTAGRAM

168. If $3a + 4b = 22$, $8a - 5b = -4$, then the value of $(a + b)^2 = ?$



(A) 36

(B) 72

(C) 25

(D) 49

$3a + 4b = 22$, $8a - 5b = -4$, எனில் $(a + b)^2$ ன் மதிப்பு யாது?

(A) 36

(B) 72

(C) 25

(D) 49

108). $3a + 4b = 22$, $8a - 5b = -4$. $(a+b)^2 = ?$

$$3a + 4b = 22 \quad \text{--- (1)}$$

$$\begin{array}{r} 8a - 5b = -4 \quad \text{--- (2)} \\ \underline{(-1) \quad (+) \quad (+)} \end{array}$$

$$-5a + 9b = 26$$

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$$24a + 32b = 176$$

$$\begin{array}{r} 24a - 15b = -12 \\ \underline{(-1) \quad (+) \quad (+)} \end{array}$$

$$47b = 188$$

$$b = 4$$

$$3a + 4 \times 4 = 22$$

$$3a = 22 - 16$$

$$3a = 6$$

$$a = 2$$

$$a + b = 4 + 2 = 6$$

$$(a+b)^2 = 6^2 = 36. \text{ option A?}$$

158. Simplify $5\frac{1}{2} + \frac{3}{4}$ of $\frac{8}{9}$

(A) $6\frac{1}{4}$

(B) $6\frac{1}{6}$

(C) $6\frac{8}{9}$

(D) $6\frac{4}{8}$

(E) Answer not known

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சுருக்குக : $5\frac{1}{2} + \frac{3}{4}$ இன் $\frac{8}{9}$

(A) $6\frac{1}{4}$

(B) $6\frac{1}{6}$

(C) $6\frac{8}{9}$

(D) $6\frac{4}{8}$

(E) விடை தெரியவில்லை

158) simplify: $5\frac{1}{2} + \frac{3}{4}$ of $\frac{8}{9}$.

$$\frac{3}{4} \text{ of } \frac{8}{9} = \frac{3}{4} \times \frac{8}{9} = \frac{2}{3}$$

$$5\frac{1}{2} = \frac{11}{2}$$

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$$5\frac{1}{2} + \frac{2}{3} = \frac{11}{2} + \frac{2}{3} = \frac{33+4}{6} = \frac{37}{6} = 6\frac{1}{6}$$

Answer = $6\frac{1}{6}$ (option B)

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159. Simplify : $\frac{4}{3} + \frac{3}{2} - \frac{5}{3} \div \frac{30}{12} - \frac{12}{9} \times \frac{-27}{16}$

(A) $\frac{53}{12}$

(B) $\frac{43}{12}$

(C) $\frac{33}{12}$

(D) $\frac{13}{12}$

(E) Answer not known

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சுருக்குக : $\frac{4}{3} + \frac{3}{2} - \frac{5}{3} \div \frac{30}{12} - \frac{12}{9} \times \frac{-27}{16}$

Simplify

(A) $\frac{53}{12}$

(B) $\frac{43}{12}$

(C) $\frac{33}{12}$

(D) $\frac{13}{12}$

(E) விடை தெரியவில்லை

TELEGRAM

159) Simplify: $\frac{4}{3} + \frac{3}{2} - \frac{5}{3} \div \frac{30}{12} - \frac{12}{9} \times \frac{-27}{16}$.

USE BODMAS Rule:

$$\frac{5}{3} \div \frac{30}{12} = \frac{5}{3} \times \frac{12}{30} = \frac{2}{3}$$

$$\frac{4}{3} + \frac{3}{2} - \frac{2}{3} - \frac{12}{9} \times \frac{-27}{16} = ??$$

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$$\frac{12}{9} \times \frac{-27}{16} = -\frac{9}{4}$$

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$$\frac{4}{3} + \frac{3}{2} - \frac{2}{3} - \left(-\frac{9}{4}\right) = \frac{4}{3} + \frac{3}{2} - \frac{2}{3} + \frac{9}{4}$$

$$= \frac{4-2}{3} + \frac{9}{4} + \frac{3}{2} = \frac{2}{3} + \frac{9}{4} + \frac{3}{2}$$

$$= \frac{8+27+18}{12} = \frac{53}{12} = 4 \frac{5}{12}$$

Answer = $\frac{53}{12}$ (option A)

TELEGRAM

12

$$\text{Answer} = \frac{53}{12} \text{ (option A)}$$

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All the best!!

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THANK YOU !!!

132. Find the value of $\sqrt{58 + \sqrt{31 + \sqrt{21 + \sqrt{11 + \sqrt{25}}}}}$

(A) 7

☒ (B) 8

(C) 9

(D) 6

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மதிப்புக் காண் : $\sqrt{58 + \sqrt{31 + \sqrt{21 + \sqrt{11 + \sqrt{25}}}}}$

(A) 7

(B) 8

(C) 9

(D) 6

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132)

$$\sqrt{58 + \sqrt{31 + \sqrt{21 + \sqrt{11 + \sqrt{25}}}}}$$

$$\sqrt{25} = 5, \quad \sqrt{11 + 5} = \sqrt{16} = 4,$$

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$$\sqrt{21 + 4} = \sqrt{25} = 5, \quad \sqrt{31 + 5} = \sqrt{36} = 6.$$

$$\sqrt{58 + 6} = \sqrt{64} = 8.$$

Answer = 8 (option B)

TNP

WHATSAPP GRP

109. The value of $\frac{x^2 - 2x}{x^2 + 2x} \times \frac{3x + 6}{x - 2}$

(A) $3x$

☒ (B) 3

(C) $3x + 2$

(D) $x - 2$

$\frac{x^2 - 2x}{x^2 + 2x} \times \frac{3x + 6}{x - 2}$ என மதிப்பு

(A) $3x$

(B) 3

(C) $3x + 2$

(D) $x - 2$

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109)

$$\frac{x^2 - 2x}{x^2 + 2x} \times \frac{3x + 6}{x - 2}$$

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$$\frac{x(x-2)}{x(x+2)} \times \frac{3(x+2)}{(x-2)} = 3.$$

Answer = 3 (option B)

VIDEOS

110. A boy is now twice as old as his sister, four years ago, he was thrice as old as her what are their ages now?

(A) 18, 9

(B) 14, 7

☒ (C) 16, 8

(D) 12, 6

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ஒரு பையனின் தற்போதைய வயது அவனது தங்கையின் வயதைப்போல இரு மடங்கு, 4 ஆண்டுகளுக்கு முன்பு அவனது வயது அவன் தங்கையின் வயதைப்போல மூன்று மடங்கு எனில், அவர்களது தற்போதைய வயது என்ன?

(A) 18, 9

(B) 14, 7

(C) 16, 8

(D) 12, 6

VIDEOS

10) അധികത്തിന്റെ വയസ്സ് = A.

കുട്ടിയുടെ വയസ്സ് = B.

$$A = 2B \quad \text{--- ①.}$$

4 years ago,

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$$(A-4) = 3(B-4) \quad \text{--- ②.}$$

$$\text{① in ②} \Rightarrow 2B - 4 = 3B - 12$$

$$3B - 2B = 12 - 4$$

$$B = 8, \quad A = 2 \times 8 = 16.$$

Answer = 16, 8 (option C)

111. $x^{3/2} : 9 = 16 : \sqrt{x}$. What is the value of x ?

(A) ± 16

(B) ± 3

(C) ± 4

✓ (D) ± 12

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$x^{3/2} : 9 = 16 : \sqrt{x}$ எனில் x ன் மதிப்பு என்ன?

(A) ± 16

(B) ± 3

(C) ± 4

(D) ± 12

111) $x^{\frac{3}{2}} : 9 = 16 : \sqrt{x}$, what is the value of x ?

$$x^{\frac{3}{2}} \times \sqrt{x} = 9 \times 16.$$

$$\begin{aligned} a:b &= c:d \\ ad &= bc \end{aligned}$$

$$x^{\frac{3}{2}} \times x^{\frac{1}{2}} = 9 \times 16$$

$$x^{\frac{4}{2}} = 9 \times 16$$

$$x^2 = 9 \times 16$$

$$x = \sqrt{9 \times 16} = \pm 3 \times 4 = \pm 12.$$

$\therefore$ Answer = ± 12 (option 2)

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114. Factorization of $(x+y)^2 + 9(x+y) + 8$ is

(A) $(x+y+1)(x+y)$

☒ (B) $(x+y+1)(x+y+8)$

(C) $(x+y+1)(x+y+6)$

(D) $(x+y+8)(x+y+2)$

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$(x+y)^2 + 9(x+y) + 8$ —ன் காரணிகள்

(A) $(x+y+1)(x+y)$

(B) $(x+y+1)(x+y+8)$

(C) $(x+y+1)(x+y+6)$

(D) $(x+y+8)(x+y+2)$

$$114) (x+y)^2 + 9(x+y) + 8 = ???$$

$$\underbrace{(x+y)^2 + (x+y)} + \underbrace{8(x+y) + 8}$$

$$(x+y)(x+y+1) + 8(x+y+1)$$

$$\boxed{(x+y+1)(x+y+8) \text{ option B}}$$

164. $\left(\frac{x^m}{x^n}\right)^{m+n} \cdot \left(\frac{x^n}{x^l}\right)^{n+l} \cdot \left(\frac{x^l}{x^m}\right)^{l+m} = \dots$

☒ (A) 1

(B) -1

(C) x^{m+n+l}

(D) $\frac{1}{x^{m+n+l}}$

$\left(\frac{x^m}{x^n}\right)^{m+n} \cdot \left(\frac{x^n}{x^l}\right)^{n+l} \cdot \left(\frac{x^l}{x^m}\right)^{l+m} \cong \dots$

(A) 1

(B) -1

(C) x^{m+n+l}

(D) $\frac{1}{x^{m+n+l}}$

$$164) \left(\frac{x^m}{x^n} \right)^{m+n} \cdot \left(\frac{x^n}{x^l} \right)^{n+l} \cdot \left(\frac{x^l}{x^m} \right)^{l+m} = ??$$

$$= \frac{x^{m(m+n)}}{x^{n(m+n)}} \cdot \frac{x^{n(n+l)}}{x^{l(n+l)}} \cdot \frac{x^{l(l+m)}}{x^{m(l+m)}}$$

$$= \frac{x^{m(m+n) + n(n+l) + l(l+m)}}{x^{n(m+n) + l(n+l) + m(l+m)}}$$

$$= 1$$

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Answer = 1 option A)

166. The value of: $\frac{x^3-1}{x+3} \div \frac{x^2+x+1}{3x+9} = ?$

(A) $3x-1$

(B) $3(x+1)$

✓ (C) $3(x-1)$

(D) $3x+2$

$\frac{x^3-1}{x+3} \div \frac{x^2+x+1}{3x+9}$ www.tnpscfor genius.com

(A) $3x-1$

(B) $3(x+1)$

(C) $3(x-1)$

(D) $3x+2$

$$166) \frac{x^3 - 1}{x + 3} \div \frac{x^2 + x + 1}{3x + 9} = ??$$

$$\frac{(x-1)(x^2+x+1)}{(x+3)} \div \frac{(x^2+x+1)}{3(x+3)}$$

$$\frac{(x-1)(x^2+x+1)}{(x+3)} \times \frac{3(x+3)}{(x^2+x+1)}$$

$$3(x-1)$$

! Answer = $3(x-1)$ option C

170. Simplify : $\frac{2x^4 - 162}{(x^2 + 9)(2x - 6)}$

(A) $x^2 - 9$

✓ (B) $x + 3$

(C) $x + 6$

(D) $x - 6$

கூடுக்கு: $\frac{2x^4 - 162}{(x^2 + 9)(2x - 6)}$

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(A) $x^2 - 9$

(B) $x + 3$

(C) $x + 6$

(D) $x - 6$

$$(70) \frac{2x^4 - 162}{(x^2 + 9)(2x - 6)}$$

$$= \frac{2(x^4 - 81)}{(x^2 + 9) 2(x - 3)} = \frac{(x^4 - 3^4)}{(x^2 + 9)(x - 3)}$$

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

Answer = $(x+3)$ (option B)

128. Simplify :

$$\left(-\frac{1}{3}\right) - \left\{1 \div \left(\frac{2}{3} \times \frac{5}{7}\right) + 8 - \left[5 - \frac{1}{2} - \frac{1}{4}\right]\right\}$$

(A) $2\frac{21}{60}$

✓ (B) $-5\frac{41}{60}$

(C) $5\frac{41}{60}$

(D) $-2\frac{21}{60}$

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கருத்து :

$$\left(-\frac{1}{3}\right) - \left\{1 \div \left(\frac{2}{3} \times \frac{5}{7}\right) + 8 - \left[5 - \frac{1}{2} - \frac{1}{4}\right]\right\}$$

(A) $2\frac{21}{60}$

(B) $-5\frac{41}{60}$

(C) $5\frac{41}{60}$

(D) $-2\frac{21}{60}$

128) simplify:

$$\left(-\frac{1}{3}\right) - \left\{ 1 \div \left(\frac{2}{3} \times \frac{5}{7}\right) + 8 - \left[5 - \frac{1}{2} - \frac{1}{4}\right] \right\}$$

$$= \left(-\frac{1}{3}\right) - \left\{ 1 \div \frac{10}{21} + 8 - 5 + \frac{1}{4} \right\}$$

$$= -\frac{1}{3} - \left\{ \frac{21}{10} + 3 + \frac{1}{4} \right\}$$

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$$\frac{102}{97}$$

$$= -\frac{1}{3} - \left\{ \frac{42 + 60 + 5}{20} \right\}$$

$$= -\frac{1}{3} - \frac{107}{20} = -\frac{20 + 321}{60} = -\frac{341}{60}$$

$$\text{Ans} = -5 \frac{41}{60} \text{ option B)$$

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133. The value of $\frac{9^2 \times 18^4}{3^{16}}$ is

(A) $\frac{2}{3}$

(B) $\frac{4}{9}$

✓ (C) $\frac{16}{81}$

(D) $\frac{32}{243}$

$\frac{9^2 \times 18^4}{3^{16}}$ -ன் மதிப்பு

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(A) $\frac{2}{3}$

(B) $\frac{4}{9}$

(C) $\frac{16}{81}$

(D) $\frac{32}{243}$

WHATSAPP GRP

133) The value of $\frac{9^2 \times 18^4}{3^{16}} = ???$

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$$9 = 3^2, 18 = 3^2 \times 2$$

$$\Rightarrow \frac{9^2 \times 18^4}{3^{16}} = \frac{(3^2)^2 \times (3^2 \times 2)^4}{3^{16}}$$

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$$= \frac{3^4 \times 3^8 \times 2^4}{3^{16}} = \frac{3^{12} \times 2^4}{3^{16}} = 3^{12-16} \times 2^4$$

$$= 3^{-4} \times 2^4 = \frac{16}{81}$$

Answer = $\frac{16}{81}$ option c

134. The cube root of 0.027 is

(A) 3

(B) 0.003

(C) 0.03

✓ (D) 0.3

(0.027) ன் கன மூலம்

(A) 3

(B) 0.003

(C) 0.03

(D) 0.3

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134) cube root of $0.027 = 27 \times 10^{-3}$

$$\sqrt[3]{27 \times 10^{-3}} = \sqrt[3]{27} \times \sqrt[3]{10^{-3}} = 3 \times 10^{-1} = 0.3$$

Ans = 0.3 (option D)

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135. If $\frac{a+b}{c} = \frac{b+c}{a} = \frac{c+a}{b} = k$, Then the value of k is

(A) 0

(B) 1

✓ (C) 2

(D) $a+b+c$

$$\frac{a+b}{c} = \frac{b+c}{a} = \frac{c+a}{b} = k \text{ எனில் } k \text{ ன் மதிப்பு}$$

(A) 0

(B) 1

(C) 2

(D) $a+b+c$

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$$135) \frac{a+b}{c} = \frac{b+c}{a} = \frac{c+a}{b} = k. \quad \boxed{k = ??}$$

$$a+b=ck, \quad b+c=ak, \quad c+a=bk.$$

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$$(a+b) + (b+c) + (c+a) = ck + ak + bk.$$

$$2a + 2b + 2c = ak + bk + ck.$$

$$2(a+b+c) = k(a+b+c)$$

$$\boxed{k=2} \quad \text{option c).}$$

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184. Simplify : $\frac{(3^3)^{-2} \times (2^2)^{-3}}{(2^4)^{-2} \times 3^{-4} \times 4^{-2}}$

✓ (A) $7\frac{1}{9}$

(B) $7\frac{1}{8}$

(C) $6\frac{2}{9}$

(D) $6\frac{3}{8}$

சுருக்குக : $\frac{(3^3)^{-2} \times (2^2)^{-3}}{(2^4)^{-2} \times 3^{-4} \times 4^{-2}}$ www.tnpscfor genius.com

(A) $7\frac{1}{9}$

(B) $7\frac{1}{8}$

(C) $6\frac{2}{9}$

(D) $6\frac{3}{8}$

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18A) simplify:
$$\frac{(3^3)^{-2} \times (2^2)^{-3}}{(2^3)^{-1} \times 3^{-4} \times 4^{-2}}$$

$$= \frac{3^{-6} \times 2^{-6}}{2^{-8} \times 3^{-4} \times (2^2)^{-2}} = \frac{3^{-6} \times 2^{-6}}{2^{-8} \times 3^{-4} \times 2^{-4}}$$

$$= \frac{3^{-6} \times 2^{-6}}{3^{-4} \times 2^{-12}} = 3^{-2} \times 2^6 = \frac{2^6}{3^2}$$

$$= \frac{64}{9} = 7 \frac{1}{9}$$

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Answer = $7 \frac{1}{9}$ (option A)

147. If $\frac{a}{b} = \frac{9}{5}$ then $\frac{a+b}{a-b} = ?$

(A) $\frac{3}{7}$

(B) $\frac{7}{3}$

(C) $\frac{2}{7}$

(D) $\frac{7}{2}$

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$\frac{a}{b} = \frac{9}{5}$ எனில் $\frac{a+b}{a-b}$ என்பது என்ன?

(A) $\frac{3}{7}$

(B) $\frac{7}{3}$

(C) $\frac{2}{7}$

(D) $\frac{7}{2}$

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$$147) \frac{a}{b} = \frac{9}{5}, \quad \frac{a+b}{a-b} = ??$$

$$\frac{a+b}{a-b} = \frac{9+5}{9-5} = \frac{14}{4} = \frac{7}{2}$$

Answer = $\frac{7}{2}$ (option D)

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188. If $x + \frac{1}{x} = 2$, find the value of $x^3 + \frac{1}{x^3}$.

(A) 1

☒ (B) 2

(C) 3

(D) 4

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$x + \frac{1}{x} = 2$ எனில் $x^3 + \frac{1}{x^3}$ -ன் மதிப்பு என்ன?

(A) 1

(B) 2

(C) 3

(D) 4

$$188) \left(x + \frac{1}{x}\right) = 2, \left(x^3 + \frac{1}{x^3}\right) = ?$$

$$\left(x + \frac{1}{x}\right)^3 = \left(x^3 + \frac{1}{x^3}\right) + \left(3 \times x \times \frac{1}{x}\right) \left(x + \frac{1}{x}\right)$$

$$2^3 = \left(x^3 + \frac{1}{x^3}\right) + (3 \times 2)$$

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$$8 - 6 = x^3 + \frac{1}{x^3}$$

$$\boxed{2 = x^3 + \frac{1}{x^3}} \quad \text{Option B)$$

193. Richard is fifteenth from the front in a column of boys. There were thrice as many behind him as there were in front. How many boys are there between Richard and the seventh boy from the end of the column?

(A) 33

(B) 34

☒ (C) 35

(D) 36

ரிச்சர்ட் என்பவர் ஒரு வரிசையில் முன் இருந்து 15-வது நபராக நிற்கிறார். அவருக்கு பின், முன் இருப்பவர்களின் எண்ணிக்கையில் மூன்று மடங்கு என்றால், அவருக்கும் வரிசையில் பின் இருந்து 7-வது நிற்கும் நபருக்கும் இடையே எத்தனை நபர்கள் உள்ளனர்?

(A) 33

(B) 34

(C) 35

(D) 36

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193)

14 members
(x)

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15th → Richard's place.

$$?(3x-7)$$

$$= (3 \times 14) - 7$$

$$= 42 - 7$$

3x

7

Ans = 35
option C)

146. If $\sqrt{784} + x = 78\%$ of 500, then the value of x is

(A) 342

(B) 352

✓ (C) 362

(D) 372

$\sqrt{784} + x = 500$ -ன் 78% எனில், x -ன் மதிப்பு

(A) 342

(B) 352

(C) 362

(D) 372

TELEGRAM

$$146) \sqrt{784} + x = 500 \text{ of } 784.$$

$$x = ?$$

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$$\sqrt{784} + x = 784 \text{ of } 500$$

$$\sqrt{784} + x = \frac{784}{100} \times 500 = 390$$

$$x = 390 - \sqrt{784}$$

$$= 390 - 28 = 362.$$

$$\therefore x = 362 \text{ (option c).}$$

152. If $x^2 + 4y^2 = 4xy$, then $x : y$ is



(A) 2 : 1

(B) 1 : 2

(C) 1 : 1

(D) 1 : 4

$x^2 + 4y^2 = 4xy$ எனில் $x : y$ -ன் மதிப்பு

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(A) 2 : 1

(B) 1 : 2

(C) 1 : 1

(D) 1 : 4

$$152) x^2 + 4y^2 = 4xy$$

$$x:y = ??$$

check options:

$$(i) 2:1 \Rightarrow x=2, y=1.$$

$$x^2 + 4y^2 = 2^2 + 4 \times 1^2 = 4 + 4 = 8.$$

$$4xy = 4 \times 2 \times 1 = 8.$$

$$L.H.S = R.H.S.$$

option A is correct

$\therefore$ Answer = 2:1 (option A)

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192. If $\frac{a}{b} = \frac{4}{5}$ and $\frac{b}{c} = \frac{15}{16}$ then, the value of $\frac{c^2 - a^2}{c^2 + a^2}$ is

(A) $\frac{1}{7}$

☒ (B) $\frac{7}{25}$

(C) $\frac{3}{4}$

(D) $\frac{1}{4}$

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$\frac{a}{b} = \frac{4}{5}$ மற்றும் $\frac{b}{c} = \frac{15}{16}$ எனில், $\frac{c^2 - a^2}{c^2 + a^2}$ -ன் மதிப்பு

(A) $\frac{1}{7}$

(B) $\frac{7}{25}$

(C) $\frac{3}{4}$

(D) $\frac{1}{4}$

$$192) \frac{a}{b} = \frac{4}{5}, \frac{b}{c} = \frac{15}{16} \Rightarrow \frac{b}{c} = \frac{5}{\frac{16}{3}}$$

$$\frac{c^2 - a^2}{c^2 + a^2} = ?$$

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$$a = 4, b = 5, c = \frac{16}{3}$$

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$$\frac{\left(\frac{16}{3}\right)^2 - (4^2)}{\left(\frac{16}{3}\right)^2 + 4^2} = \frac{\left(\frac{256}{9} - 16\right)}{\left(\frac{256}{9}\right) + 16} = \frac{\frac{256 - 16 \times 9}{9}}{\frac{256 + 16 \times 9}{9}}$$

$$= \frac{256 - 144}{256 + 144} = \frac{112}{400} = \frac{28}{100} = \frac{7}{25} = 7:25$$

Answer = $\frac{7}{25}$ (option B)

195. If $5^a = 6$; $6^b = 7$; $7^c = 5$, then find the value of abc .

(A) 0

(B) -1

(C) 2

✓ (D) 1

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$5^a = 6$; $6^b = 7$; $7^c = 5$ எனில், abc -ன் மதிப்பு என்ன?

(A) 0

(B) -1

(C) 2

(D) 1

195) $5^a = 6$; $6^b = 7$; $7^c = 5$ எனில், $abc = ?$??

$$5^a = 6 \Rightarrow 5 = 6^{\frac{1}{a}}$$

$$5 = 7^c$$

$$6^{\frac{1}{a}} = 7^c$$

$$7^c = 6^b \Rightarrow 6^{\frac{1}{a}} = (6^b)^c$$

$$6^{\frac{1}{a}} = 6^{bc}$$

$$\frac{1}{a} = bc \Rightarrow \boxed{abc = 1 \text{ (option D)}}$$

196. The value of $\sqrt[3]{\sqrt[3]{\sqrt[3]{a}}}$ is

(A) $\sqrt[3]{a^{xz}}$

(B) $\sqrt[3]{a^z}$

✓ (C) $\sqrt[xyz]{a}$

(D) $\sqrt[3]{a^{yz}}$

$\sqrt[3]{\sqrt[3]{\sqrt[3]{a}}}$ -ன் மதிப்பு யாது?

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(A) $\sqrt[3]{a^{xz}}$

(B) $\sqrt[3]{a^z}$

(C) $\sqrt[xyz]{a}$

(D) $\sqrt[3]{a^{yz}}$

$$196) \sqrt{x \sqrt{y \sqrt{z \sqrt{x}}}} = ?$$

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$$\sqrt{x} = x^{1/2}$$

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$$\sqrt{y \sqrt{x^{1/2}}} = (x^{1/2})^{1/y} = x^{1/4}$$

$$\sqrt{x \sqrt{y \sqrt{z \sqrt{x}}}} = (x^{1/4})^{1/x} = x^{1/4x} = \sqrt[4x]{x}$$

$$\therefore \text{Answer} = \sqrt[4x]{x}$$

Option C.

19. $5\sqrt{2} + \sqrt{32}$ ன் மதிப்பு

A) $21\sqrt{2}$

B) $5\sqrt{2}$

C) $32\sqrt{2}$

D) $9\sqrt{2}$

The value of $5\sqrt{2} + \sqrt{32}$ is

A) $21\sqrt{2}$

www.tnpscfor genius.com B) $5\sqrt{2}$

C) $32\sqrt{2}$

D) $9\sqrt{2}$

TELEGRAM

$$19) 5\sqrt{2} + \sqrt{32} = ?$$

$$\sqrt{32} = \sqrt{16 \times 2} = 4\sqrt{2}$$

$$5\sqrt{2} + 4\sqrt{2} = 9\sqrt{2} \text{ (option D)}$$

172. Find the point of intersection of the straight line $9x - y - 2 = 0$ and $2x + y - 9 = 0$.

(A) $(-1, 7)$

(B) $(7, 1)$

☒ (C) $(1, 7)$

(D) $(-1, -7)$

$9x - y - 2 = 0$, $2x + y - 9 = 0$ என்ற நேர்கோடுகள் வெட்டும் புள்ளி காண்க.

(A) $(-1, 7)$

(B) $(7, 1)$

(C) $(1, 7)$

(D) $(-1, -7)$

$$172) \quad 9x - y - 2 = 0, \\ 2x + y - 9 = 0.$$

மேல்க்கொண்ட 4ஓர் கொள்?

$$9x - y = 2 \quad - (1)$$

$$2x + y = 9 \quad - (2)$$

$$11x = 11$$

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$$\boxed{x = 1}$$

$$(2 \times 1) + y = 9$$

$$y = 9 - 2 = 7.$$

$$(x, y) = (1, 7)$$

Answer = (1, 7) Option C

174. If $(x + m)(x + n) = x^2 + 6x + 5$ find $m^2 + n^2$

(A) 25

☒ (B) 26

(C) 27

(D) 28

$(x + m)(x + n) = x^2 + 6x + 5$ எனில் $m^2 + n^2$ -ன் மதிப்பானது

(A) 25

(B) 26

(C) 27

(D) 28

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(74) If $(x+m)(x+n) = x^2 + 6x + 5$.

Find $(m^2 + n^2) = ??$.

$(x+m)(x+n) = x^2 + nx + mx + mn$.

$x^2 + \underline{6x} + \underline{5} = x^2 + x(\underline{m+n}) + \underline{mn}$.

Here, $6 = m+n$, $5 = mn$.

Find: $(m^2 + n^2) = ??$

$$(m+n)^2 = m^2 + n^2 + 2mn.$$

Here, $(m+n) = 6$, $mn = 5$

$$6^2 = (m^2 + n^2) + (2 \times 5)$$

$$36 - 10 = m^2 + n^2.$$

$\therefore 26 = \text{ANSWER}$

OPTION B)

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175. Choose the best answer :

Two numbers differ by 5. If their product is 336, then the sum of two number is

(A) 21

(B) 28

☒ (C) 37

(D) 51

சரியான விடையை எழுதுக.

இரண்டு எண்களின் வித்தியாசம் 5. அவற்றின் பெருக்கற்பலன் 336, அந்த இரண்டு எண்களின் கூடுதல்

(A) 21

(B) 28

(C) 37

(D) 51

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175) Assume that numbers as x and y .

$$x - y = 5. \quad xy = 336. \quad x + y = ?$$

$$(x - y)^2 = x^2 + y^2 - 2xy \quad - (1)$$

$$\begin{array}{r} 336 \\ \times 4 \\ \hline 1344 \end{array}$$

Add $4xy$ on both sides.

$$(x - y)^2 + 4xy = x^2 + y^2 - 2xy + 4xy.$$

$$(x - y)^2 + 4xy = (x^2 + y^2 + 2xy) = (x + y)^2.$$

$$(x + y) = \sqrt{(x - y)^2 + 4xy}.$$

$$= \sqrt{(5^2) + (4 \times 336)} = \sqrt{25 + 1344}$$

$$= \sqrt{1369} = 37.$$

$\therefore$ Answer $= 37$ (option c).

191. If $\left(\frac{7}{12}\right)^{-4} \times \left(\frac{7}{12}\right)^{3x} = \left(\frac{7}{12}\right)^5$; then the value of x is

(A) -1

(B) 1

(C) 2

✓ (D) 3

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$\left(\frac{7}{12}\right)^{-4} \times \left(\frac{7}{12}\right)^{3x} = \left(\frac{7}{12}\right)^5$ எனில் x -ன் மதிப்பு

(A) -1

(B) 1

(C) 2

(D) 3

TELEGRAM

$$191) \text{ It } \left(\frac{7}{12}\right)^{-4} \times \left(\frac{7}{12}\right)^{3x} = \left(\frac{7}{12}\right)^5.$$

Then the value of 'x' is.

$$a^x \times a^y = a^{x+y}$$

Here $a = \frac{7}{12}$, $x = -4$, $y = 3x$.

$$\left(\frac{7}{12}\right)^{(-4+3x)} = \left(\frac{7}{12}\right)^5$$

$$\Rightarrow -4 + 3x = 5$$

$$3x = 5 + 4 = 9$$

$$x = \frac{9}{3} = 3$$

$$\therefore x = 3 \text{ (option D)}.$$

TELEGRAM

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195. Simplify

$$5\frac{1}{4} + 4\frac{3}{4} + 7\frac{5}{8} + 6\frac{7}{8} \div 11\frac{3}{4}$$

✓ (A) $\frac{98}{47}$

(B) $\frac{108}{49}$

(C) $\frac{98}{45}$

(D) $\frac{96}{47}$

கருத்து

$$5\frac{1}{4} + 4\frac{3}{4} + 7\frac{5}{8} + 6\frac{7}{8} \div 11\frac{3}{4}$$

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(A) $\frac{98}{47}$

(B) $\frac{108}{49}$

(C) $\frac{98}{45}$

(D) $\frac{96}{47}$

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$$195) \left(5\frac{1}{4} + 4\frac{3}{4} + 7\frac{5}{8} + 6\frac{7}{8} \right) \div 11\frac{3}{4}$$

$$= \left(5\frac{1}{4} + 4\frac{3}{4} + 7\frac{5}{8} + 6\frac{7}{8} \right) \div 11\frac{3}{4}$$

$$= \left(\frac{21}{4} + \frac{19}{4} + \frac{61}{8} + \frac{55}{8} \right) \div 11\frac{3}{4}$$

$$= \left(\frac{40}{4} + \frac{58}{8} \right) \div \frac{47}{4}$$

$$= \left(\frac{40+58}{4} \right) \div \frac{47}{4} = \frac{98}{4} \div \frac{47}{4}$$

$$= \frac{98}{\cancel{4}} \times \frac{\cancel{4}}{47} = \frac{98}{47} \quad \text{Option A)}$$

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142. The value of $\sqrt{609 + \sqrt{248 + \sqrt{60 + \sqrt{7 + \sqrt{81}}}}}$

(A) 20

✓ (B) 25

(C) 16

(D) 9

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$\sqrt{609 + \sqrt{248 + \sqrt{60 + \sqrt{7 + \sqrt{81}}}}}$ ன் மதிப்பு

(A) 20

(B) 25

(C) 16

(D) 9

142) $\sqrt{609 + \sqrt{248 + \sqrt{60 + \sqrt{7 + \sqrt{81}}}}}$

$$\sqrt{81} = 9$$

$$\sqrt{7+9} = \sqrt{16} = 4$$

$$\sqrt{60+4} = \sqrt{64} = 8$$

$$\sqrt{248+8} = \sqrt{256} = 16$$

$$\sqrt{609+16} = \sqrt{625} = 25.$$

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Answer = 25
(option B)

144. If $3(t-3) = 5(2t+1)$ then $t = ?$

☒ (A) -2

(B) 2

(C) -3

(D) 3

$3(t-3) = 5(2t+1)$ எனில் $t = ?$

(A) -2

(B) 2

(C) -3

(D) 3

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144) If $3(t-3) = 5(2t+1)$, then $t = ?$

$$3t - 9 = 10t + 5$$

$$10t - 3t = -5 - 9$$

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$$7t = -14$$

$$t = \frac{-14}{7} = -2$$

$t = -2$ option A)

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145. The value of $\frac{1.75 \times 1.75 + 2 \times 1.75 \times 0.75 + 0.75 \times 0.75}{1.75 \times 1.75 - 0.75 \times 0.75}$

(A) 3.5

(B) 6.25

(C) 1

☒ (D) 2.5

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$\frac{1.75 \times 1.75 + 2 \times 1.75 \times 0.75 + 0.75 \times 0.75}{1.75 \times 1.75 - 0.75 \times 0.75}$ ன் மதிப்பு

(A) 3.5

(B) 6.25

(C) 1

(D) 2.5

(45) The value of

$$\frac{1.75 \times 1.75 + 2 \times 1.75 \times 0.75 + 0.75 \times 0.75}{1.75 \times 1.75 - 0.75 \times 0.75}$$

Take $a = 1.75$, $b = 0.75$.

Now express,

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$$\frac{a \times a + 2ab + b \times b}{a^2 - b^2} = \frac{a^2 + 2ab + b^2}{a^2 - b^2}$$

$$= \frac{(a+b)^2}{(a+b)(a-b)} = \frac{a+b}{a-b} = \frac{1.75 + 0.75}{1.75 - 0.75}$$

$$= \frac{2.5}{1} = 2.5 \text{ (option D)}$$

MATHS MATERIAL

148. Three angles of a triangle are $x - 30^\circ$, $x - 45^\circ$, $x + 15^\circ$, find the value of x .

(A) 60°

(B) 40°

✓ (C) 80°

(D) 100°

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ஒரு முக்கோணத்தின் மூன்று கோணங்கள் $x - 30^\circ$, $x - 45^\circ$, $x + 15^\circ$ எனில் x -ன் மதிப்பு

(A) 60°

(B) 40°

(C) 80°

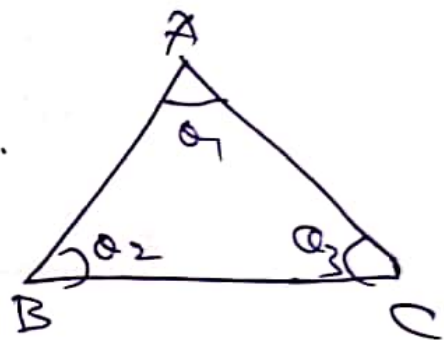
(D) 100°

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$$148) \theta_1 = x - 30^\circ$$

$$\theta_2 = x - 45^\circ, \theta_3 = x + 15^\circ.$$

$$\theta_1 + \theta_2 + \theta_3 = 180^\circ.$$



$$(x - 30^\circ) + (x - 45^\circ) + (x + 15^\circ) = 180^\circ$$

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$$3x - 60 = 180$$

(option c)

$$3x = 180 + 60 = 240, \quad x = \frac{240}{3} = 80^\circ$$

136. $\left(-1\frac{2}{7}\right) + \left(-3\frac{5}{7}\right) + \left(6\frac{4}{7}\right)$ is _____.

(A) $\frac{3}{7}$

(B) $\frac{5}{7}$

✓ (C) $\frac{11}{7}$

(D) $\frac{19}{7}$

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$\left(-1\frac{2}{7}\right) + \left(-3\frac{5}{7}\right) + \left(6\frac{4}{7}\right)$ ன் மதிப்பு _____.

(A) $\frac{3}{7}$

(B) $\frac{5}{7}$

(C) $\frac{11}{7}$

(D) $\frac{19}{7}$

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$$136) \left(-1 \frac{2}{7}\right) + \left(-3 \frac{5}{7}\right) + \left(6 \frac{4}{7}\right)$$

$$-1 \frac{2}{7} = -\frac{9}{7}, \quad -3 \frac{5}{7} = -\frac{26}{7}, \quad 6 \frac{4}{7} = \frac{46}{7}$$

$$-\frac{9}{7} + -\frac{26}{7} + \frac{46}{7} = \frac{-9-26+46}{7} = \frac{-9+20}{7}$$

Answer = $\frac{11}{7}$ option c).

119. Simplify :

$$\frac{9}{8} \div \frac{3}{5} \text{ of } \left(\frac{3}{4} + \frac{3}{5} \right)$$

(A) $1\frac{11}{18}$

(B) $1\frac{5}{18}$

(C) $1\frac{13}{18}$

✓ (D) $1\frac{7}{18}$

கருத்து:

$$\frac{9}{8} \div \frac{3}{5} \text{ of } \left(\frac{3}{4} + \frac{3}{5} \right)$$

(A) $1\frac{11}{18}$

(B) $1\frac{5}{18}$

(C) $1\frac{13}{18}$

(D) $1\frac{7}{18}$

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119) simplify:

$$\frac{9}{8} \div \frac{3}{5} \text{ of } \left(\frac{3}{4} + \frac{3}{5} \right)$$

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BODMAS Rule is used in this problem.

$$\frac{3}{4} + \frac{3}{5} = \frac{15+12}{20} = \frac{27}{20}$$

$$\frac{3}{5} \text{ of } \frac{27}{20} = \frac{3}{5} \times \frac{27}{20} = \frac{81}{100}$$

$$\frac{9}{8} \div \frac{81}{100} = \frac{450}{81} = \frac{75}{9}$$

$$\frac{9}{8} \div \frac{81}{100} = \frac{9}{8} \times \frac{100}{81} = \frac{25}{18} = 1 \frac{7}{18}$$

Ans: option C)

124. If $y - \frac{1}{y} = 6$ find the value of $y^3 - \frac{1}{y^3}$

(A) 216

(B) 222

☒ (C) 234

(D) 228

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$y - \frac{1}{y} = 6$ எனில் $y^3 - \frac{1}{y^3}$ இன் மதிப்பைக் காண்க.

(A) 216

(B) 222

(C) 234

(D) 228

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124) If $y - \frac{1}{y} = 6$ Find, $y^3 - \frac{1}{y^3} = ??$

Let's use the formula.

$$(a-b)^3 = a^3 - b^3 - 3ab(a-b)$$

Here, $a = y$, $b = \frac{1}{y}$.

$$\left(y - \frac{1}{y}\right)^3 = y^3 - \left(\frac{1}{y}\right)^3 - \left(3 \times y \times \frac{1}{y}\right) \left(y - \frac{1}{y}\right)$$

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

$$6^3 + 18 = y^3 - \frac{1}{y^3}$$

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$$216 + 18 = y^3 - \frac{1}{y^3}$$

$$234 = y^3 - \frac{1}{y^3}$$

$\therefore$ Answer = 234 option c).

43. $n(A) = 5$ எனில், $n(P(A))$ ன் மதிப்பு

A) 32

B) 16

C) 8

D) 64.

If $n(A) = 5$ then $n(P(A))$ is

A) 32

B) 16

C) 8

D) 64.

STUDY MATERIALS

$$43) n(A) = 5. \quad n\{P(A)\} = ???$$

$$n\{P(A)\} = 2^5 = 2 \times 2 \times 2 \times 2 \times 2 = 32$$

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Answer = 32 (option A)

138. The difference of the squares of two positive numbers is 45. The square of the smaller number is four times the larger number. Find the numbers

- (A) 3 and 15
- (B) 9 and 5
- (C) 3 and 16
- (D) 9 and 6

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இரண்டு மிகை எண்களின் வர்க்கங்களின் வித்தியாசம் 45. சிறிய எண்ணின் வர்க்கம் ஆனது பெரிய எண்ணின் நான்கு மடங்கிற்குச் சமம் எனில் அந்த எண்களைக் காண்க

- (A) 3 மற்றும் 15
- (B) 9 மற்றும் 5
- (C) 3 மற்றும் 16
- ☒ (D) 9 மற்றும் 6

138) அந்த மிகை எண்கள் x, y என்க.

$x > y$ என வைத்துக்கொள்க.

மிகை எண் $= x$. ஏறிய எண் $= y$.

Condition: $x^2 - y^2 = 45$. — (1)

$y^2 = 4x$ — (2).

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② in ① $\Rightarrow x^2 - 4x = 45$

$x^2 - 4x - 45 = 0$

$(x+5)(x-9) = 0$.

$\begin{array}{cc} -45 & \\ \swarrow & \searrow \\ \frac{5}{x} & \frac{-9}{x} \end{array}$ — 4

$x = -5, x = 9$.

x ஒரு மிகை எண். (positive no)

எனவே, $x = 9$ என்பதே சூ?

$y^2 = 4x = 4 \times 9 = 36$.

$y = \pm 6$.

$y = 6$ என எடுக்கவும்.

$\therefore$ எனவே, அந்த 2 எண்கள் $(x, y) = 9, 6$.

141. Express $0.\overline{35}$ into fraction



(A) $\frac{35}{99}$

(B) $\frac{35}{100}$

(C) $3\frac{5}{10}$

(D) $\frac{35}{1000}$

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$0.\overline{35}$ என்ற எண்ணை பின்னமாக மாற்றுக

(A) $\frac{35}{99}$

(B) $\frac{35}{100}$

(C) $3\frac{5}{10}$

(D) $\frac{35}{1000}$

141) Express $0.\overline{35}$.

Solution: $0.\overline{35} = 0.353535\ldots$

Assume, $x = 0.353535\ldots$ — ①

① $\times 100 \Rightarrow 100x = 35.353535\ldots$ — ②

$$\begin{array}{r} \text{②} - \text{①} \Rightarrow 100x = 35.353535\ldots \\ \quad \quad \quad x = 0.353535\ldots \end{array}$$

$$99x = 35$$

$$x = \frac{35}{99}$$

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TELEGRAM

191. Simplify $\frac{(3^3)^{-2} \times (2^2)^{-3}}{(2^4)^{-2} \times 3^{-4} \times 4^{-2}}$

(A) $7\frac{2}{9}$

(B) $9\frac{2}{7}$

 (C) $7\frac{1}{9}$

(D) $9\frac{1}{7}$

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சுருக்கம் : $\frac{(3^3)^{-2} \times (2^2)^{-3}}{(2^4)^{-2} \times 3^{-4} \times 4^{-2}}$

(A) $7\frac{2}{9}$

(B) $9\frac{2}{7}$

(C) $7\frac{1}{9}$

(D) $9\frac{1}{7}$

$$191) \frac{(3^3)^{-2} \times (2^2)^{-3}}{(2^4)^{-2} \times 3^{-4} \times 4^{-2}}$$

$$\text{Ans} = \frac{3^{-6} \times 2^{-6}}{2^{-8} \times 3^{-4} \times (2^2)^{-2}} = \frac{3^{-6} \times 2^{-6}}{2^{-8} \times 3^{-4} \times 2^{-4}}$$

$$= 3^{-6} \times 2^{-6} \times 2^{+8} \times 3^4 \times 2^4$$

$$= 3^{-6+4} \times 2^{-6+8+4} = 3^{-2} \times 2^6$$

$$= \frac{2^6}{3^2} = \frac{64}{9} = 7\frac{1}{9} \text{ (option c)}$$

194. Find the cube root of $1\frac{61}{64}$

(A) $\frac{5}{8}$

(B) $\frac{3}{7}$

 (C) $\frac{5}{4}$

(D) $\frac{8}{5}$

$1\frac{61}{64}$ —ன் முப்படி மூலம் காண்

(A) $\frac{5}{8}$

(B) $\frac{3}{7}$

(C) $\frac{5}{4}$

(D) $\frac{8}{5}$

194) Find cube root of $1 \frac{61}{64}$.
(Answer given)

$$1 \frac{61}{64} = \frac{64 + 61}{64} = \frac{125}{64}$$

$$\text{cube root of } \frac{125}{64} = \sqrt[3]{\frac{125}{64}}$$

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$$= \frac{\sqrt[3]{125}}{\sqrt[3]{64}} = \frac{5}{4} \quad (\text{option c})$$

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59. $a = 5, b = 3$ எனில் $a^2 + ab$ ன் மதிப்பு

A) 80

B) 40

C) 60

D) 45

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x **1701**

901

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59) $a=5$, $b=3$, $a^2 + ab = ?$

$$a^2 + ab = 5^2 + (5 \times 3) = 25 + 15 = 40$$

Answer = 40 option B)

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182. Simplify :

$$\sqrt[4]{\sqrt[3]{x^2}}$$

☒ (A) $x^{1/6}$

(B) $x^{1/12}$

(C) $x^{1/3}$

(D) $x^{1/4}$

சுருக்குக :

$$\sqrt[4]{\sqrt[3]{x^2}}$$

(A) $x^{1/6}$

(B) $x^{1/12}$

(C) $x^{1/3}$

(D) $x^{1/4}$

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182)

$$\sqrt[4]{\sqrt[3]{x^2}}$$

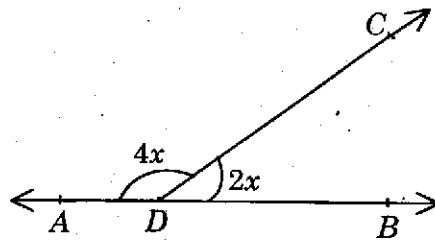
$$\sqrt[3]{x^2} = (x^2)^{\frac{1}{3}} = x^{\frac{2}{3}}$$

$$\sqrt[4]{x^{\frac{2}{3}}} = (x^{\frac{2}{3}})^{\frac{1}{4}} = x^{\frac{2}{3} \times \frac{1}{4}} = x^{\frac{1}{6}}$$

(option A)

115. From the fig, find the value of 'x'

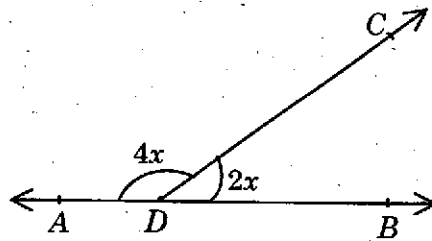
VIDEOS



- (A) 30°
(B) 60°
(C) 90°
(D) 45°

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பின்வரும் படத்தில் 'x' ன் மதிப்பைக் காண.



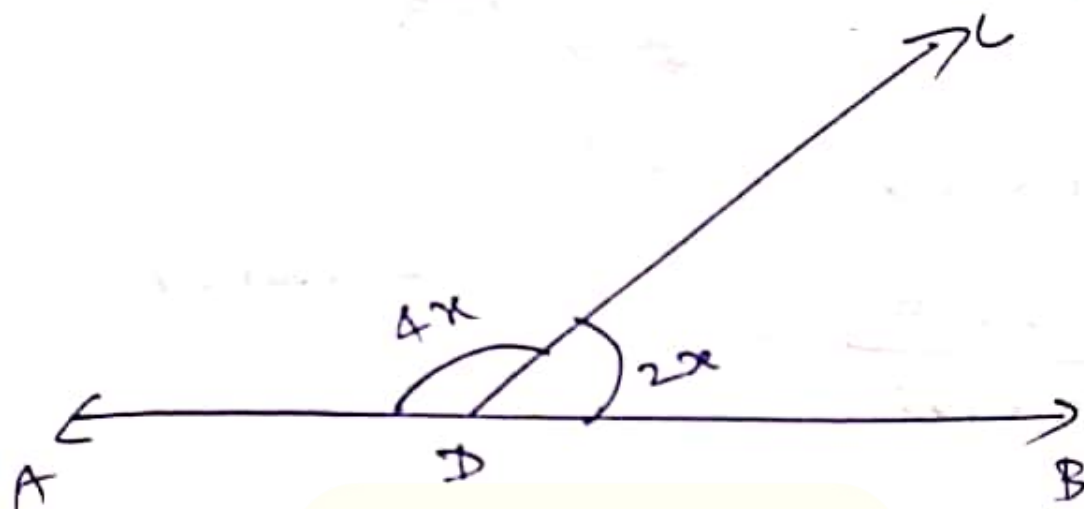
- (A) 30°
(B) 60°
(C) 90°
(D) 45°

VIDEOS

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SOLUTION

by TNPSCFORGENIUS

115)



we know that, www.tnpscforgenius.com

$$4x + 2x = 180^\circ$$

$$6x = 180^\circ$$

$$x = \frac{180^\circ}{6} = 30^\circ$$

$\therefore x = 30^\circ$ option A)

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118. If $\frac{a}{b} = \frac{4}{3}$ then the value of $\frac{6a+4b}{6a-5b}$ is

(A) -1

(B) 3

(C) 4

(D) 5

$\frac{a}{b} = \frac{4}{3}$ எனில் $\frac{6a+4b}{6a-5b}$ ன் மதிப்பு காண்க

(A) -1

(B) 3

(C) 4

(D) 5

118) $\frac{a}{b} = \frac{4}{3}$ then, $\frac{6a+4b}{6a-5b}$ is = ???

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$$\frac{6a+4b}{6a-5b} = \frac{(6 \times 4) + (4 \times 3)}{(6 \times 4) - (5 \times 3)} = \frac{24 + 12}{24 - 15} = \frac{36}{9}$$

Answer = 4 (option c)

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TELEGRAM

120. Simplify $\sqrt{214 + \sqrt{112 + \sqrt{74 + \sqrt{49}}}}$

(A) 15

(B) 18

(C) 25

(D) 17

கருக்குக $\sqrt{214 + \sqrt{112 + \sqrt{74 + \sqrt{49}}}}$

(A) 15

(B) 18

(C) 25

(D) 17

120) simplify:

$$\sqrt{214 + \sqrt{112 + \sqrt{74 + \sqrt{49}}}}$$

$$\sqrt{49} = 7$$

$$\sqrt{74 + 7} = \sqrt{81} = 9$$

$$\sqrt{112 + 9} = \sqrt{121} = 11$$

$$\sqrt{214 + 11} = \sqrt{225} = 15 \text{ (ANSWER : 15) (OPTION A)}$$

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123. Using Identities $x - y = -6$; $xy = 4$, Find the value of $x^3 - y^3$

☒ (A) -288

(B) -388

(C) -268

(D) -278

$x - y = -6$; $xy = 4$; எனில் $x^3 - y^3$ -ன் மதிப்பு காண்க

(A) -288

(B) -388

(C) -268

(D) -278

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$$123) \quad x - y = -6, \quad xy = 4, \quad x^3 - y^3 = ?$$

$$(x - y)^3 = x^3 - y^3 - 3xy(x - y)$$

$$(-6)^3 = (x^3 - y^3) - 3 \times 4(-6)$$

$$-216 = (x^3 - y^3) - 12 \times -6$$

$$-216 = (x^3 - y^3) + 72$$

$$x^3 - y^3 = -216 - 72 = -288$$

option A)

169. If the mean of $x, x+2, x+4, x+6, x+8$ is 20 then find the value of x

(A) 32

~~(B)~~ 16

(C) 8

(D) 4

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$x, x+2, x+4, x+6, x+8$ என்ற எண்களின் சராசரி 20 எனில் x ன் மதிப்பு காண்க

(A) 32

(B) 16

(C) 8

(D) 4

$$(69) \quad x, x+2, x+4, x+6, x+8$$

$$\text{average} = 20.$$

$$\text{count} = 5.$$

$$\text{average} = \frac{\text{sum}}{\text{count}}$$

$$20 = \frac{x + x + 2 + x + 4 + x + 6 + x + 8}{5}$$

$$100 = 5x + 20$$

$$5x = 100 - 20 = 80$$

$$x = \frac{80}{5} = 16$$

∴ Answer: 16 (option B).

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