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Decimal Fraction



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Q. 1 The value of $\frac{(0.96)^3 - (0.1)^3}{(0.96)^2 + 0.096 + (0.1)^2}$ is:

- [A] 0.86
- [B] 0.95
- [C] 0.97
- [D] 1.06

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Answer Option [A]

Explanation:

$$\begin{aligned} \text{Given expression} &= \frac{(0.96)^3 - (0.1)^3}{(0.96)^2 + (0.96 \times 0.1) + (0.1)^2} \\ &= \left(\frac{a^3 - b^3}{a^2 + ab + b^2} \right) \\ &= (a - b) \\ &= (0.96 - 0.1) \\ &= 0.86 \end{aligned}$$

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Q. 2 What decimal of an hour is a second ?

- [A] .0025
- [B] .0256
- [C] .00027
- [D] .000126

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Answer Option [C]

Explanation:

$$\text{Required decimal} = \frac{1}{60 \times 60} = \frac{1}{3600} = .00027$$

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Q. 3 The value of $\frac{0.1 \times 0.1 \times 0.1 + 0.02 \times 0.02 \times 0.02}{0.2 \times 0.2 \times 0.2 + 0.04 \times 0.04 \times 0.04}$ is:

- [A] 0.0125
- [B] 0.125
- [C] 0.25
- [D] 0.5

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Answer Option [B]

Explanation:

$$\text{Given expression} = \frac{(0.1)^3 + (0.02)^3}{2^3 [(0.1)^3 + (0.02)^3]} = \frac{1}{8} = 0.125$$

Q. 4 **3889 + 12.952 - ? = 3854.002**

- [A] 47.095
- [B] 47.752
- [C] 47.932
- [D] 47.95

Answer Option [D]

Explanation:

Let $3889 + 12.952 - x = 3854.002$.
Then $x = (3889 + 12.952) - 3854.002$
 $= 3901.952 - 3854.002$
 $= 47.95$.

Q. 5 **$3.\overline{87} - 2.\overline{59} = ?$**

- [A] 1.20
- [B] $1.\overline{2}$
- [C] $1.\overline{27}$
- [D] $1.\overline{28}$

Answer Option [D]

Explanation:

$$\begin{aligned} 3.\overline{87} - 2.\overline{59} &= (3 + 0.\overline{87}) - (2 + 0.\overline{59}) \\ &= \left(3 + \frac{\quad}{87} \right) - \left(2 + \frac{\quad}{59} \right) \quad 99 \quad 99 \\ &= 1 + \left(\frac{\quad}{87} - \frac{\quad}{59} \right) \quad 99 \quad 99 \\ &= 1 + \frac{28}{99} \\ &= 1.\overline{28}. \end{aligned}$$

Q. 6 $\frac{(0.1667)(0.8333)(0.3333)}{(0.2222)(0.6667)(0.1250)}$ is approximately equal to:

- [A] 2
- [B] 2.40
- [C] 2.43
- [D] 2.50

Answer Option [D]

Explanation:

$$\begin{aligned} \text{Given expression} &= \frac{(0.3333)}{(0.2222)} \times \frac{(0.1667)(0.8333)}{(0.6667)(0.1250)} \\ &= 3333 \times \frac{1}{\quad} \times \frac{5}{\quad} \end{aligned}$$

$$\frac{2222}{\frac{2}{3} \times \frac{125}{1000}}$$

$$= \left(\frac{3}{2} \times \frac{1}{6} \times \frac{5}{6} \times \frac{3}{2} \times 8 \right)$$

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

$$= 2.50$$

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Q. 7 **34.95 + 240.016 + 23.98 = ?**

- [A] 298.0946
- [B] 298.111
- [C] 298.946
- [D] 299.09

Answer Option [C]

Explanation:

$$34.95 \quad 240.016 \quad + \quad 23.98 \quad \text{-----} \quad 298.946 \quad \text{-----}$$

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Q. 8 **The expression (11.98 x 11.98 + 11.98 x x + 0.02 x 0.02) will be a perfect square for x equal to:**

- [A] 0.02
- [B] 0.2
- [C] 0.04
- [D] 0.4

Answer Option [C]

Explanation:

Given expression = (11.98)² + (0.02)² + 11.98 x x.
 For the given expression to be a perfect square, we must have
 11.98 x x = 2 x 11.98 x 0.02 or x = 0.04

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Q. 9 **The rational number for recurring decimal 0.125125.... is:**

- [A] $\frac{63}{487}$
- [B] $\frac{119}{993}$
- [C] $\frac{125}{999}$

[D] None of these

Answer Option [C]

Explanation:

$$0.125125... = 0.\overline{125} = \frac{125}{999}$$

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Q. 10 If $\frac{144}{0.144} = \frac{14.4}{x}$, then the value of x is:

[A] 0.0144

[B] 1.44

[C] 14.4

[D] 144

Answer Option [A]

Explanation:

$$\frac{144}{0.144} = \frac{14.4}{x}$$

$$\Rightarrow \frac{144 \times 1000}{144} = \frac{14.4}{x}$$

$$\Rightarrow x = \frac{14.4}{1000} = 0.0144$$

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Q. 11 $\frac{5 \times 1.6 - 2 \times 1.4}{1.3} = ?$

[A] 0.4

[B] 1.2

[C] 1.4

[D] 4

Answer Option [D]

Explanation:

$$\text{Given Expression} = \frac{8 - 2.8}{1.3} = \frac{5.2}{1.3} = \frac{52}{13} = 4.$$

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Q. 12 $\frac{4.2 \times 4.2 - 1.9 \times 1.9}{2.3 \times 6.1}$ is equal to:

[A] 0.5

[B] 1.0

[C] 20

[D] 22

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Answer Option [B]

Explanation:

$$\text{Given Expression} = \frac{(a^2 - b^2)}{(a + b)(a - b)} = \frac{(a^2 - b^2)}{(a^2 - b^2)} = 1.$$

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Q. 13 **0.04 x 0.0162 is equal to:**

[A] 6.48×10^{-3}

[B] 6.48×10^{-4}

[C] 6.48×10^{-5}

[D] 6.48×10^{-6}

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Answer Option [B]

Explanation: $4 \times 162 = 648$. Sum of decimal places = 6.
So, $0.04 \times 0.0162 = 0.000648 = 6.48 \times 10^{-4}$

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Q. 14 **0.002 x 0.5 = ?**

[A] 0.0001

[B] 0.001

[C] 0.01

[D] 0.1

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Answer Option [B]

Explanation:
 $2 \times 5 = 10$.
Sum of decimal places = 4
 $\therefore 0.002 \times 0.5 = 0.001$

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Q. 15 **How many digits will be there to the right of the decimal point in the product of 95.75 and .02554 ?**

[A] 5

[B] 6

[C] 7

[D] None of these

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Answer Option [B]

Explanation:
Sum of decimal places = 7.
Since the last digit to the extreme right will be zero (since $5 \times 4 = 20$), so there will be 6 significant digits to the right of the decimal point.

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Q. 16 When 0.232323..... is converted into a fraction, then the result is:

[A] $\frac{1}{5}$

[B] $\frac{2}{9}$

[C] $\frac{23}{99}$

[D] $\frac{23}{100}$

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Answer Option [C]

Explanation:

$$0.232323... = 0.\overline{23} = \frac{23}{99}$$

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Q. 17 Evaluate : $\frac{(2.39)^2 - (1.61)^2}{2.39 - 1.61}$

[A] 2

[B] 4

[C] 6

[D] 8

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Answer Option [B]

Explanation:

$$\text{Given Expression} = \frac{a^2 - b^2}{a - b} = \frac{(a + b)(a - b)}{(a - b)} = (a + b) = (2.39 + 1.61) = 4.$$

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Q. 18 $\frac{.009}{?} = .01$

[A] .0009

[B] .09

[C] .9

[D] 9

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Answer Option [C]

Explanation:

$$\text{Let } \frac{.009}{x} = .01; \text{ Then } x = \frac{.009}{.01} = \frac{.9}{1} = .9$$

Q. 19 The least among the following is:

[A] 0.2

[B] $1 \div 0.2$

[C] $0.\bar{2}$

[D] $(0.2)^2$

Answer Option [D]

Explanation:

$$1 \div 0.2 = \frac{1}{0.2} = \frac{10}{2} = 5;$$

$$0.\bar{2} = 0.222\dots;$$

$$(0.2)^2 = 0.04.$$

$$0.04 < 0.2 < 0.22\dots < 5.$$

Since 0.04 is the least, so $(0.2)^2$ is the least.

Q. 20 Which of the following are in descending order of their value ?

[A] $\frac{1}{3}, \frac{2}{5}, \frac{3}{7}, \frac{4}{5}, \frac{5}{6}, \frac{6}{7}$

[B] $\frac{1}{3}, \frac{2}{5}, \frac{3}{5}, \frac{4}{7}, \frac{5}{6}, \frac{6}{7}$

[C] $\frac{1}{3}, \frac{2}{5}, \frac{3}{5}, \frac{4}{6}, \frac{5}{7}, \frac{6}{7}$

[D] $\frac{6}{7}, \frac{5}{6}, \frac{4}{5}, \frac{3}{7}, \frac{2}{5}, \frac{1}{3}$

Answer Option [D]

Q. 21 Which of the following fractions is greater than $\frac{3}{4}$ and less than $\frac{5}{6}$?

[A] $\frac{1}{2}$

[B] $\frac{2}{3}$

[C] $\frac{4}{5}$

[D] $\frac{9}{10}$

Answer Option [C]

Explanation:

$$\frac{3}{4} = 0.75, \quad \frac{5}{6} = 0.833, \quad \frac{1}{2} = 0.5, \quad \frac{2}{3} = 0.66, \quad \frac{4}{5} = 0.8, \quad \frac{9}{10} = 0.9.$$

Clearly, 0.8 lies between 0.75 and 0.833.

$$\therefore \frac{4}{5} \text{ lies between } \frac{3}{4} \text{ and } \frac{5}{6}.$$

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Q. 22 **The correct expression of $6.\overline{46}$ in the fractional form is:**

[A] $\frac{646}{99}$

[B] $\frac{64640}{1000}$

[C] $\frac{640}{100}$

[D] $\frac{640}{99}$

Answer Option [D]

Explanation:

$$6.\overline{46} = 6 + 0.\overline{46} = 6 + \frac{46}{99} = \frac{594 + 46}{99} = \frac{640}{99}.$$

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Q. 23 **4.036 divided by 0.04 gives :**

[A] 1.009

[B] 10.09

[C] 100.9

[D] None of these

Answer Option [C]

Explanation:

$$\frac{4.036}{0.04} = \frac{403.6}{4} = 100.9$$

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Q. 24 **Which of the following is equal to 3.14×10^6 ?**

[A] 314

- [B] 3140
 [C] 3140000
 [D] None of these

Answer Option [C]

Explanation:

$$3.14 \times 10^6 = 3.14 \times 1000000 = 3140000.$$

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Q. 25 The value of $\frac{489.1375 \times 0.0483 \times 1.956}{0.0873 \times 92.581 \times 99.749}$ is closet to:

- [A] 0.006
 [B] 0.06
 [C] 0.6
 [D] 6

Answer Option [B]

Explanation:

$$\frac{489.1375 \times 0.0483 \times 1.956}{0.0873 \times 92.581 \times 99.749} \approx \frac{489 \times 0.05 \times 2}{0.09 \times 93 \times 100}$$

$$= \frac{489}{9 \times 93 \times 10}$$

$$= \frac{163}{279} \times \frac{1}{10}$$

$$= \frac{0.58}{10}$$

$$= 0.058 \approx 0.06.$$

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Q. 26 If $2994 \div 14.5 = 172$, then $29.94 \div 1.45 = ?$

- [A] 0.172
 [B] 1.72
 [C] 17.2
 [D] 172

Answer Option [C]

Explanation:

$$\frac{29.94}{1.45} = \frac{299.4}{14.5}$$

$$= \left(\frac{\quad}{2994} \times \frac{\quad}{1} \right) \text{ [Here, Substitute 172 in the place of } 2994/14.5 \text{] } \frac{14.5}{10}$$

$$= \frac{172}{10}$$

$$= 17.2$$

Q. 27 $617 + 6.017 + 0.617 + 6.0017 = ?$

- [A] 6.2963
- [B] 62.965
- [C] 629.6357
- [D] None of these

Answer Option [C]

Explanation:

$$617.00 \quad 6.017 \quad 0.617 \quad + \quad 6.0017 \quad \text{-----} \quad 629.6357 \quad \text{-----}$$

Q. 28 $\frac{0.0203 \times 2.92}{0.0073 \times 14.5 \times 0.7} = ?$

- [A] 0.8
- [B] 1.45
- [C] 2.40
- [D] 3.25

Answer Option [A]

Explanation:

$$\frac{0.0203 \times 2.92}{0.0073 \times 14.5 \times 0.7} = \frac{203 \times 292}{73 \times 145 \times 7} = \frac{4}{5} = 0.8$$

Q. 29 The price of commodity x increases by 40 paise every year, while the price of commodity y increases by 15 paise every year. If in 2001, the price of commodity x was Rs. 4.20 and that of y was Rs. 6.30, in which year commodity x will cost 40 paise more than the commodity y ?

- [A] 2010
- [B] 2011
- [C] 2012
- [D] 2013

Answer Option [B]

Explanation:

Suppose commodity x will cost 40 paise more than y after z years.

$$\text{Then, } (4.20 + 0.40z) - (6.30 + 0.15z) = 0.40$$

$$\Rightarrow 0.25z = 0.40 + 2.10$$

$$\Rightarrow z = \frac{2.50}{0.25} = \frac{250}{25} = 10.$$

$\therefore x$ will cost 40 paise more than y 10 years after 2001 i.e., 2011.

Q. 30 The fraction $101 \frac{27}{100000}$ in decimal form is:

[A] .01027

[B] .10127

[C] 101.00027

[D] 101.000027

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Answer Option [C]

Explanation:

$$101 \frac{27}{100000} = 101 + \frac{27}{100000} = 101 + .00027 = 101.00027$$