

1. Evaluate $\frac{3.8^2 - 1.2^2}{3.8 - 1.2}$

- A. 5.2 B. 4.8
C. 4 D. 5

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Here is the answer and explanation

Answer : Option D

Explanation :

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

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$$\frac{3.8^2 - 1.2^2}{3.8 - 1.2} = \frac{(3.8 + 1.2)(3.8 - 1.2)}{(3.8 - 1.2)} = 3.8 + 1.2 = 5$$

2. If $204 \div 12.75 = 16$, then $2.04 \div 1.275 = ?$

- A. 16 B. 1.6
C. 0.16 D. 0.016

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Here is the answer and explanation

Answer : Option B

Explanation :

$$\frac{204}{12.75} = 16$$

$$\Rightarrow \frac{20.4}{1.275} = 16 \quad (\because \text{Divided Numerator and Denominator by } 10)$$

$$\Rightarrow \frac{2.04}{1.275} = 1.6 \quad (\because \text{Divided LHS and RHS by } 10)$$

3. $0.03 \times 0.0124 = ?$

- A. 3.72×10^{-6} B. 3.72×10^{-5}
C. 3.72×10^{-3} D. 3.72×10^{-4}

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Here is the answer and explanation

Answer : Option D

Explanation :

Reference : Multiplication of Decimal Fractions

$$3 \times 124 = 372$$

$$\text{Sum of the decimal places in } 0.03 \text{ and } 0.0124 = 2 + 4 = 6$$

$$\text{Hence, } 0.03 \times 0.0124 = 372 \times 10^{-6} = 3.72 \times 10^{-4}$$

4. $7212 + 15.231 - ? = 6879$

- A. 359.022 B. 362.02
C. 328.221 D. 348.231

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Answer : Option D

Explanation :

$$\text{Required Value} = 7212 + 15.231 - 6879 = 348.231$$

5. $4211.01 + 22.261 - ? = 2645.759$

- A. 1587.512 B. 1586.532
C. 1588.021 D. 1586.422

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Answer : Option A

Explanation :

$$\text{Required Value} = 4211.01 + 22.261 - 2645.759 = 1587.512$$

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

- A. 2008 B. 2009
C. 2010 D. 2011

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Answer : Option D

Explanation :

Let the commodity P costs 40 paise more than the commodity Q after n years

Price of the commodity P in 2001 = Rs.4.20

Since the price of the commodity P increases by Rs 0.40 every year,

Price of the commodity P after n years from 2001 = Rs.4.20 + (n × .40)

Price of the commodity Q in 2001 = Rs.6.30

Since the price of the commodity Q increases by Rs 0.15 every year,
price of the commodity Q after n years from 2001 = Rs.6.30 + (n × .15)

Since the commodity P costs Rs. 0.40 more than the commodity Q after n years from 2001,

$$4.20 + (n \times .40) = 6.30 + (n \times .15) + 0.40$$

$$\Rightarrow (40n - .15n) = 6.30 - 4.20 + 0.40 = 2.5$$

$$\Rightarrow .25n = 2.5$$

$$\Rightarrow n = \frac{2.5}{.25} = \frac{250}{25} = 10$$

\Rightarrow Commodity P costs Rs.0.40 more than the commodity Q after 10 years from 2001. i.e., in 2011

7. Which of the following fractions is greater than $\frac{3}{5}$ and less than $\frac{6}{7}$?

A. $\frac{7}{8}$

B. $\frac{1}{3}$

C. $\frac{2}{3}$

D. $\frac{1}{2}$

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Answer : Option C

Explanation :

Solution 1

$$\frac{3}{5} = 0.6$$

$$\frac{6}{7} = 0.85 \quad (\text{Taken only the first two digits after the decimal point})$$

Hence, the question is to find out a number which is greater than 0.6 and less than 0.85

The given choices are

$$\frac{1}{2} = 0.5$$

$$\frac{2}{3} = 0.66 \quad (\text{Taken only the first two digits after the decimal point})$$

$$\frac{1}{3} = 0.33 \quad (\text{Taken only the first two digits after the decimal point})$$

$$\frac{7}{8} = 0.87 \quad (\text{Taken only the first two digits after the decimal point})$$

Clearly, $0.66 = \frac{2}{3}$ is the answer

Solution 2

LCM of 5, 7, 2, 3, 3, 8 = 840

$$\frac{3}{5} = \frac{504}{840}$$

$$\frac{6}{7} = \frac{720}{840}$$

Hence, the question is to find out a number which is between the above numbers

The given choices are

$$\frac{1}{2} = \frac{420}{840}$$

$$\frac{2}{3} = \frac{560}{840}$$

$$\frac{1}{3} = \frac{280}{840}$$

$$\frac{7}{8} = \frac{735}{840}$$

Clearly, $\frac{560}{840} = \frac{2}{3}$ is the answer

8. $0.004 \times 0.5 = ?$

- A. None of these B. 0.02
C. 0.002 D. 0.0002

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Answer : Option C

Explanation :

$$0.004 \times 0.5 = 0.002$$

[Reference : Multiplication of Decimal Fractions]

9. How many digits will be there to the right of the decimal point in the product of 89.635 and .02218?

- A. 5
B. 6
C. 7
D. 8

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Here is the answer and explanation

Answer : Option C

Explanation :

$$\text{Sum of decimal places} = 3 + 5 = 8$$

The last digit to the extreme right is zero (Since $5 \times 8 = 40$)

Hence, there will be 7 significant digits to the right of the decimal point.

[Reference : Multiplication of Decimal Fractions]

10. $4.\overline{86} - 3.\overline{71} = ?$

- A. $1.\overline{6}$ B. $1.\overline{5}$
C. $1.\overline{14}$ D. $1.\overline{15}$

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Here is the answer and explanation

Answer : Option D

Explanation :

$$4.\overline{86} = \left(4 + \frac{86}{99}\right)$$

[Reference : Conversion of Recurring Decimals into Vulgar Fractions]

$$3.\overline{71} = \left(3 + \frac{71}{99}\right)$$

$$\text{Hence, } 4.\overline{86} - 3.\overline{71} = \left(4 + \frac{86}{99}\right) - \left(3 + \frac{71}{99}\right) = \left(1 + \frac{15}{99}\right) = 1.\overline{15}$$

11. $4.\overline{86} - 3.\overline{95} = ?$

- A. $0.\overline{93}$ B. $0.\overline{92}$

C. $0.\overline{91}$ D. $0.\overline{90}$

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Here is the answer and explanation

Answer : Option D

Explanation :

$$4.\overline{86} = \left(4 + \frac{86}{99}\right)$$

[Reference : Conversion of Recurring Decimals into Vulgar Fractions]

$$3.\overline{95} = \left(3 + \frac{95}{99}\right)$$

$$\text{Hence, } 4.\overline{86} - 3.\overline{95} = \left(4 + \frac{86}{99}\right) - \left(3 + \frac{95}{99}\right) = \left(1 - \frac{9}{99}\right) = \frac{90}{99} = 0.\overline{90}$$

12. What is the correct expression of $8.\overline{23}$ in the fractional form?

A. $\frac{8232323}{1000000}$

B. $\frac{823}{99}$

C. $\frac{82323}{1000}$

D. $\frac{815}{99}$

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Here is the answer and explanation

Answer : Option D

Explanation :

$$8.\overline{23} = 8 + \frac{23}{99} = \frac{815}{99}$$

[Reference : Conversion of Recurring Decimals into Vulgar Fractions]

13. $24.39 + 562.093 + 35.96 = ?$

A. 622.441

B. 622.243

C. 622.233

D. 622.443

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Here is the answer and explanation

Answer : Option D

Explanation :

$$24.39 + 562.093 + 35.96 = 622.443$$

[Reference : Addition and Subtraction of Decimal Fractions]

14. $926 + 9.026 + 0.926 + 9.0026 = ?$

- A. 944.9546 B. 944.1246
C. 944.4246 D. 944.9446

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Here is the answer and explanation

Answer : Option A

Explanation :

$$926 + 9.026 + 0.926 + 9.0026 = 944.9546$$

[Reference : Addition and Subtraction of Decimal Fractions]

15. The expression $(12.86 \times 12.86 + 12.86 \times p + 0.14 \times 0.14)$ will be a perfect square for p equal to

- A. 0.28 B. 0.26
C. 1 D. 0

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Here is the answer and explanation

Answer : Option A

Explanation :

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

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$$12.86 \times 12.86 + 12.86 \times p + 0.14 \times 0.14 = (12.86)^2 + 12.86 \times p + (0.14)^2$$

This can be written as $(12.86 + 0.14)^2 = 13^2$, if $12.86 \times p = 2 \times 12.86 \times 0.14$

i.e., if $p = 2 \times 0.14 = 0.28$

Hence, $p = 0.28$ is the answer

16. Convert 0.343434..... into a fraction

- A. $\frac{31}{99}$ B. $\frac{32}{99}$
C. $\frac{33}{99}$ D. $\frac{34}{99}$

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Here is the answer and explanation

Answer : Option D

Explanation :

$$0.343434..... = 0.\overline{34} = \frac{34}{99}$$

[Reference : Conversion of Recurring Decimals into Vulgar Fractions]

17. $\frac{0.0007}{?} = 0.01$

- A. 70 B. 7
C. 0.7 D. 0.07

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Here is the answer and explanation

Answer : Option D

Explanation :

$$\text{Required Answer} = \frac{0.0007}{0.01} = \frac{.07}{1} = .07$$

[Reference : Division of Decimal Fraction/Counting Number by a Decimal Fraction]

18. What is the value of $\frac{(0.87)^3 - (0.1)^3}{(0.87)^2 + 0.087 + (0.1)^2}$

- A. 1.07 B. 0.93
C. 0.68 D. 0.77

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Here is the answer and explanation

Answer : Option D

Explanation :

$$a^3 - b^3 = (a - b)(a^2 + ab + b^2)$$

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Explanation :

Here, the given choices are not closer. Hence, we can make a fair amount of approximation in the calculations.

$$\frac{729.124932 \times 0.04293 \times 2.9233376}{0.0683 \times 97.671 \times 999.6289}$$
$$\approx \frac{730 \times 0.05 \times 3}{0.05 \times 100 \times 1000} \approx \frac{730 \times 3}{100 \times 1000} \approx \frac{73 \times 3}{10 \times 1000}$$
$$\approx \frac{219}{10 \times 1000} \approx .0219$$
$$\approx .03$$

21. What decimal of an hour is a second ?

- A. .00027 B. .00025
C. .00026 D. .00024

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Answer : Option A

Explanation :

1 hour = 60 minutes = 3600 seconds

Hence, required decimal = $1/3600 = 0.00027$

22. If $\frac{233}{0.233} = \frac{23.3}{x}$, what is the value of x

- A. 233 B. 23.3
C. 0.233 D. 0.0233

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Answer : Option D

Explanation :

$$\frac{233}{0.233} = \frac{23.3}{x}$$

$$\Rightarrow \frac{233000}{233} = \frac{23.3}{x}$$

$$\Rightarrow 1000 = \frac{23.3}{x}$$

$$\Rightarrow x = \frac{23.3}{1000} = 0.0233$$

23. $\frac{0.0406 \times 1.46}{0.008 \times 14.5 \times 0.4} = ?$

- A. 1.2775 B. 2.2423
C. 4.2223 D. 0.7423

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Answer : Option A

Explanation :

$$\frac{0.0406 \times 1.46}{0.008 \times 14.5 \times 0.4}$$

$$= \frac{406 \times 146}{8 \times 145 \times 40}$$

$$= \frac{203 \times 73}{4 \times 145 \times 20}$$

$$= \frac{14819}{11600} = 1.2775$$

But in fact, you really don't need to do this length calculation here. Given choices are not closer. Hence we can take a fair amount of approximation as given below

$$\frac{0.0406 \times 1.46}{0.008 \times 14.5 \times 0.4}$$

$$= \frac{406 \times 146}{8 \times 145 \times 40}$$

$$\approx \frac{400 \times 146}{8 \times 145 \times 40}$$

$$\approx \frac{10 \times 146}{8 \times 145}$$

$$\approx \frac{10}{8}$$

$$\approx 1.25$$

From the given choices, 1.2775 is closer to 1.25. Hence 1.2775 is the answer

24. What is the rational number for recurring decimal 0.890890890.... ?

A. $\frac{890890}{1000}$

B. $\frac{67}{421}$

C. $\frac{890}{999}$

D. None of these

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Answer : Option C

Explanation :

$$0.890890890\dots = 0.\overline{890} = \frac{890}{999}$$

[\[Reference : Conversion of Recurring Decimals into Vulgar Fractions\]](#)

25. The fraction $878 \frac{21}{10000}$ in decimal form is

A. None of these

B. 878.0021

C. 878.00021

D. 878.021

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Answer : Option B

Explanation :

$$878 \frac{21}{10000} = 878 + \frac{21}{10000} = 878 + 0.0021 = 878.0021$$

26. $\frac{(0.1667)(0.8333)(0.6666)}{(0.4444)(1.3333)(0.2500)}$ is approximately equal to

- A. 0.625 B. 0.572
C. 0.675 D. 0.724

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Here is the answer and explanation

Answer : Option A

Explanation :

$$\begin{aligned} \frac{(0.1667)(0.8333)(0.6666)}{(0.4444)(1.3333)(0.2500)} &\approx \frac{0.6666}{0.4444} \times \frac{(0.1667)(0.8333)}{(1.3333)(0.2500)} \approx \frac{6666}{4444} \times \frac{\left(\frac{1}{6}\right)\left(\frac{5}{6}\right)}{\left(\frac{4}{3}\right)\left(\frac{25}{100}\right)} \\ &\approx \frac{3}{2} \times \frac{\left(\frac{1}{6}\right)\left(\frac{5}{6}\right)}{\left(\frac{4}{3}\right)\left(\frac{1}{4}\right)} \approx \frac{3}{2} \times \frac{\left(\frac{1}{6}\right)\left(\frac{5}{6}\right)}{\left(\frac{1}{3}\right)} \\ &\approx \frac{3}{2} \times \frac{3 \times 5}{6 \times 6} \approx \frac{3}{2} \times \frac{5}{2 \times 6} \approx \frac{5}{2 \times 2 \times 2} \approx \frac{5}{8} \approx 0.625 \end{aligned}$$

27. 2.205 divided by 0.3 gives

- A. 7.35 B. 6.25
C. 8.15 D. 6.95

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Here is the answer and explanation

Answer : Option A

Explanation :

$$\frac{2.205}{0.3} = \frac{22.05}{3} = 7.35$$

28. Which is the least among the following?

- A. $1 \div 0.3$ B. $0.\overline{3}$
C. 0.3 D. $(0.3)^2$

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Here is the answer and explanation

Answer : Option D

Explanation :

$$0.3 = 0.3$$

$$0.3 = 0.33333\dots$$

$$1 \div 0.3 = 10 \div 3 = 3.3333\dots$$

$$(0.3)^2 = 0.3 \times 0.3 = .09$$

Hence, $(0.3)^2$ is the least

29.
$$\frac{5.2 \times 5.2 - 2.4 \times 2.4}{2.8 \times 7.6} = ?$$

- A. 0.1 B. 4.2
C. 0.5 D. 1

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[Here is the answer and explanation](#)

Answer : Option D

Explanation :

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

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$$\begin{aligned} \frac{5.2 \times 5.2 - 2.4 \times 2.4}{2.8 \times 7.6} &= \frac{(5.2)^2 - (2.4)^2}{2.8 \times 7.6} \\ &= \frac{a^2 - b^2}{(a - b)(a + b)} \quad \text{where } a = 5.2 \text{ and } b = 2.4 \\ &= \frac{(a - b)(a + b)}{(a - b)(a + b)} = 1 \end{aligned}$$

30. Which of the following is equal to 0.024×10^6 ?

- A. 2400000 B. 240000
C. 24000 D. 2400

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Answer : Option C

Explanation :

$$0.024 \times 10^6 = 0.024 \times 1000000 = 24000$$

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

A. $\frac{7}{8}, \frac{4}{7}, \frac{3}{7}, \frac{2}{5}, \frac{1}{4}, \frac{1}{6}$

B. None of these

C. $\frac{1}{4}, \frac{2}{5}, \frac{4}{7}, \frac{1}{6}, \frac{3}{7}, \frac{7}{8}$

D. $\frac{1}{4}, \frac{2}{5}, \frac{4}{7}, \frac{5}{6}, \frac{6}{7}, \frac{7}{8}$

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Here is the answer and explanation

Answer : Option A

Explanation :

$$1/4 = 0.25 \text{ and } 2/5 = 0.4$$

Hence, $2/5 > 1/4$

Hence, $\frac{1}{4}, \frac{2}{5}, \frac{4}{7}, \frac{5}{6}, \frac{6}{7}, \frac{7}{8}$ is not in descending order

Similarly, $\frac{1}{4}, \frac{2}{5}, \frac{4}{7}, \frac{1}{6}, \frac{3}{7}, \frac{7}{8}$ is also not in descending order

$$7/8 = 0.8 \text{ (Taken only one digit after the decimal point)}$$

$$4/7 = 0.5 \text{ (Taken only one digit after the decimal point)}$$

$$3/7 = 0.42 \text{ (Taken only two digits after the decimal point)}$$

$$2/5 = 0.4$$

$$1/4 = 0.2 \text{ (Taken only one digit after the decimal point)}$$

$$1/6 = 0.1 \text{ (Taken only one digit after the decimal point)}$$

Hence, $\frac{7}{8}, \frac{4}{7}, \frac{3}{7}, \frac{2}{5}, \frac{1}{4}, \frac{1}{6}$ is in descending order

$$32. \frac{4 \times 0.30 - 3 \times 0.500}{0.003} = ?$$

A. 10 B. -10

C. 100 D. -100

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Here is the answer and explanation

Answer : Option D

Explanation :

$$\frac{4 \times 0.30 - 3 \times 0.500}{0.003} = \frac{1.2 - 1.5}{0.003} = \frac{-0.3}{0.003} = \frac{-300}{3} = -100$$