



RRB NTPC Simplification Questions PDF

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Instructions

For the following questions answer them individually

Question 1

$$3245 - 123 - 456 - 347 + x = 3650 ?$$

- A 2134
- B 1331
- C 1567
- D 1467

Answer: B

Explanation:

$$3245 - 123 - 456 - 347 + x = 3650$$

$$2319 + x = 3650$$

$$x = 1331$$

So the answer is option B.

Question 2

$$600 \div 12 \times \frac{1}{2} \div 5 = ?$$

- A 4
- B 5
- C 6
- D 8

Answer: B

Explanation:

$$600 \div 12 \times \frac{1}{2} \div 5 = 50 \times \frac{1}{10} = 5$$

So the answer is option B.

Question 3

The number of even factors of 28 is ?

- A 2
- B 3
- C 4
- D 5

Answer: C

Explanation:

Factors of 28 are 1, 2, 4, 7, 14 & 28.

28 has 4 even numbers as it's factors

So the answer is option C.

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Question 4

Sum of two numbers is 99 and difference is 63, then find the smaller number ?

- A 18
- B 36
- C 81
- D 54

Answer: A

Explanation:

$$x+y = 99 \text{ ----(1)}$$

$$x-y = 63 \text{ ----(2)}$$

$$(1)-(2) \implies x+y-x+y = 99-63 \implies 2y = 36 \implies y = 18$$

So the answer is option A.

Question 5

Find the value of $\frac{19}{121}$ of 209 - $\frac{3}{187}$ of 51.

- A $\frac{360}{11}$
- B 43
- C 32
- D 12

Answer: C

Explanation:

$$\frac{19}{121} \text{ of } 209 - \frac{3}{187} \text{ of } 51$$

$$\frac{361}{11} - \frac{9}{11} = 32$$

Question 6

What is the approximate value of $\frac{(\sqrt{334}+\sqrt{223}) * (\sqrt{334}-\sqrt{223})}{(\sqrt{111}+\sqrt{11}) * (\sqrt{111}-\sqrt{11})}$?

- A 1.01
- B 1.10
- C 1.11
- D 1.21

Answer: C

Explanation:

The formula we use to simplify the expression is $(a+b)(a-b) = a^2 - b^2$

$$\text{So, } \frac{(\sqrt{334}+\sqrt{223}) * (\sqrt{334}-\sqrt{223})}{(\sqrt{111}+\sqrt{11}) * (\sqrt{111}-\sqrt{11})} = \frac{334-223}{111-11} = 1.11$$

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Question 7

Arrange the following fractions in descending order of value $\frac{3}{4}, \frac{11}{12}, \frac{7}{9}, \frac{13}{16}$

A $\frac{11}{12}, \frac{7}{9}, \frac{13}{16}, \frac{3}{4}$

B $\frac{11}{12}, \frac{13}{16}, \frac{3}{4}, \frac{7}{9}$

C $\frac{11}{12}, \frac{13}{16}, \frac{7}{9}, \frac{3}{4}$

D $\frac{7}{9}, \frac{13}{16}, \frac{11}{12}, \frac{3}{4}$

Answer: C

Explanation:

The four fractions given are $\frac{3}{4}, \frac{11}{12}, \frac{7}{9}, \frac{13}{16}$

The LCM of the denominators is 144.

So, the fractions can be written as $\frac{108}{144}, \frac{132}{144}, \frac{112}{144}, \frac{117}{144}$

Based on the numerators, we can arrange the four fractions in descending order as below

$\frac{11}{12}, \frac{13}{16}, \frac{7}{9}, \frac{3}{4}$

Question 8

What is the value of $7^3 + 8^3 + 3 \times 7 \times 8 \times 15 - 15^3$?

A 900

B 169

C 225

D 0

Answer: D

Explanation:

We know that $A^3 + B^3 + C^3 - 3ABC = (A + B + C) \times (A^2 + B^2 + C^2 - 3ABC)$

In this case, $A + B + C = 7 + 8 - 15 = 0$

Therefore, the value of $7^3 + 8^3 + 3 \times 7 \times 8 \times 15 - 15^3 = 0$

Question 9

If $x^2 - 5x - 24 = 0$, then find the value of x

A +8,-3

B +8,+3

C -8,-3

D -8,+3

Answer: A

Explanation:

$x^2 - 5x - 24 = 0$

So, $x^2 - 8x + 3x - 24 = 0$

$$\text{ie } x(x-8) + 3(x-8) = 0$$

$$\Rightarrow (x+3)(x-8) = 0$$

or $x = 8$ or -3

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Question 10

The simplest form of $\frac{391}{667}$ is

A $\frac{23}{31}$

B $\frac{19}{23}$

C $\frac{15}{19}$

D $\frac{17}{29}$

Answer: D

Explanation:

$$\frac{391}{667} = \frac{17 \times 23}{29 \times 23} = \frac{17}{29}$$

Question 11

$$0.5 \div 12 + 0.25 \times 0.05 = ?$$

A 0.0525

B 0.7

C 0.00196

D None of these

Answer: A

Explanation:

$$.5 \div 12 = .04$$

$$.25 * .05 = .0125$$

$$.04 + .0125 = .0525$$

Hence, (a) is the answer.

Question 12

$$\sqrt{6400} = ?$$

A 40

B 80

C 60

D None of these

Answer: B

Explanation:

$$\sqrt{6400} = \sqrt{80 \times 80} = 80$$

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Question 13

4% of 400 - 2% of 800 = ?

- A 0
- B 1
- C 8
- D 16

Answer: A

Explanation:

$$4\% \text{ of } 400 = \frac{4}{100} \times 400 = 16$$

$$2\% \text{ of } 800 = \frac{2}{100} \times 800 = 16$$

$$16 - 16 = 0$$

Question 14

When polynomial $x^4 - 3x^2 + 2x + 5$ is divided by $(x-1)$, the remainder is

- A 2
- B 3
- C 4
- D 5

Answer: D

Explanation:

$$f(x) = x^4 - 3x^3 + 2x + 5$$

to find the remainder put $x=1$ in $f(x)$

$$f(1) = 1 - 3 + 2 + 5 = 5$$

∴ 5 is the remainder

Question 15

Evaluate :- $\frac{16 \times 2^{n+1} - 4 \times 2^n}{16 \times 2^{n+2} - 2 \times 2^{n+2}}$

- A $\frac{1}{2}$
- B 0
- C 4
- D $\frac{1}{3}$

Answer: A

Explanation:

$$\frac{16 \times 2^{n+1} - 4 \times 2^n}{16 \times 2^{n+2} - 2 \times 2^{n+2}}$$

$$= \frac{2^n(32-4)}{2^{n+2}(16-2)}$$

$$= \frac{28}{4(14)} = \frac{1}{2}$$

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Question 16

Evaluate :- $(-216 \times 1728)^{\frac{1}{3}}$

A -72

B 27

C 72

D -27

Answer: A

Explanation:

$$(-216 \times 1728)^{\frac{1}{3}}$$

$$= (-6^3 \times 12^3)^{\frac{1}{3}}$$

$$= -72$$

Question 17

$612/991 = ?$

A 0.65

B 0.56

C 0.6355

D 0.6175

Answer: D

Explanation:

We see that 991 is quite close to 1000. The 1000 is 9 greater than 991 which is approximately 1%. 1% of 612 is approximately 6.

Hence we increase numerator and denominator to get

$$612/991 \sim 618/1000 = 0.618.$$

The option closest to the answer we have gotten is option D.

Hence, the answer is option D.

Question 18

$67 * 89 + 78 * 56 = ?$

A 14911

B 9991

C 10201

D 10331

Answer: D

Explanation:

$$67 * 89 = (70-3)*(90-1) = 6300-270-70+3 = 5963.$$

$$78*56 = (80-2)*(60-4) = 4800-120-320+8 = 4368$$

$$67 * 89 + 78 * 56 = 5963+4368 = 10331$$

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Question 19

50% of $(37 * 11/ 25)$

A 8.14

B 9.24

C 7.6

D 8.4

Answer: A

Explanation:

We first calculate the contents of the bracket.

$$37 * 11 \Rightarrow 3 (3+7) 7 \Rightarrow 407$$

$$407/25 = 407 * 4 / 100 = 1628/100 = 16.28.$$

$$50\% \text{ of } 16.28 = 1/2 * 16.28 = 8.14$$

Question 20

$$67^2 - 33^2 = ?$$

A 3700

B 3400

C 4532

D 3467

Answer: B

Explanation:

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

$$67^2 - 33^2 = (67 + 33)(67 - 33) = 100*34 = 3400.$$

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