71. *The value of* $\dfrac{0.0203\times2.92}{0.7\times0.0365\times2.9}\div\dfrac{(12.12)^2-(8.12)^2}{(0.25)^2+(0.25)(19.99)}$ *is:*

$\dfrac{203\times2.92}{7\times365\times2.9}\div\dfrac{(12.12)^2-(8.12)^2}{(0.25)^2+(0.25)(19.99)}$ का मान ज्ञात कीजिए।

[A] 0.05 [B] 0.5

[C] 0.1 [D] 0.01

$\frac{4}{5}\div\frac{16}{1}$

$=\frac{4}{5}\times\frac{1}{16_4}=\frac{1}{20}=.05$

$=\frac{4\times20.24}{.25\times(.25+19.99)}$

$=\frac{4}{\frac{1}{4}}=16$

SelectionWay

72. *The value of* $\frac{1}{4}+\frac{[(20.35)^2-(8.35)^2]\times 0.0175}{(1.05)^2+(1.05)(27.65)}$ *is:*

$\frac{1}{4}+\frac{[(20.35)^2-(8.35)^2]\times 0.0175}{(1.05)^2+(1.05)(27.65)}$ का मान ज्ञात करें।

(CGL MAINS 2020)

[A] $\frac{3}{10}$

[B] $\frac{9}{20}$

[C] $\frac{7}{20}$

[D] $\frac{3}{20}$

$$\frac{1}{4}+\frac{12\times 28.7\times 0.175}{1.05\times(1.05+27.65)\times 4}$$

$$=\frac{1}{4}\times\frac{1}{5}=\frac{1}{20}$$

73. *The value of* $\frac{48.3\times\{4.95^2+4.95\times13.25\}}{[(12.55)^2-(5.65)^2]\times19.8}$ *is:*

$\frac{48.3\times\{4.95^2+4.95\times13.25\}}{[(12.55)^2-(5.65)^2]\times19.8}$ **का मान क्या है?**

(a) 17.5

(b) 0.175

(c) 1.75

(d) 175

#

$35 \times 37 + 1 = 36^2$

$-1 \quad +1$

36

$\sqrt{291 \times 295 + 4} = 293$

$\sqrt{871 \times 881 + 25} = 876$

$-5 \quad +5$

876

$$\left(525 \times 533 + 16\right)^{\frac{1}{4}} = ?$$

$(529-4)\cdot(529+4)$

$$\left(529^2 - 4^2 + 16\right)^{\frac{1}{4}}$$

$529 = 23^2$

$$\left(23^4\right)^{\frac{1}{4}} = 23$$

a) 21

b) 22

c) 23

d) 24

74. *If* $(x + 7957 \times 7965)$ *is a perfect square, then find the value of* x*?*

[A] 1

[B] 16

[C] 9

[D] 25

$= 7961^2$

SSC

75. *Find* $\dfrac{\sqrt{4916*4922+9}}{4918*4920+1}$

$= \dfrac{4919}{4919^2} = \dfrac{1}{4919}$

$-1 \quad +1$

4919

76. If A=8289535×8289545 , B=8289534×8289546 ,C=8289533×8289547 Find smallest of A , B and C ?

यदि A=8289535×8289545, B=8289534×8289546 C=8289533×8289547 तो A, B और C में से सबसे छोटा खोजें ?

[A] A
[B] B
[C] C
[D] ~~All are same~~

avg = 8289540

$A = 8289540^2 - 5^2$ सबसे बड़ा

$B = (\quad)^2 - 6^2$

$C = (\quad)^2 - 7^2$ सबसे छोटा

77. *The value of* $(1018)2 - 1019 \times 1017 + 1015 \times 1012 - 1016 \times 1011$ *is:*

$(1018)^2 - 1019 \times 1017 + 1015 \times 1012 - 1016 \times 1011$ का मान ज्ञात करें।

[A] 1 **[B]** 4

[C] 3 **[D]** 5

$4 - 3 + 0 - 6$

$= -5 = 5$

78. *The value of* $\frac{(0.13)^2+(0.21)^2}{(0.39)^2+81(0.07)^2} \div \frac{(2.4)^4+3\times(11.52)+9}{(2.4)^6+6(2.4)^4+3\times(17.28)}$ *lies between:*

$\frac{(0.13)^2+(0.21)^2}{(0.39)^2+81(0.07)^2} \div \frac{(2.4)^4+3\times(11.52)+9}{(2.4)^6+6(2.4)^4+3\times(17.28)}$ का मान किसके बीच स्थित है?

(CPO 2020)

[A] 0.4 and 0.5
[B] 0.7 and 0.8
[C] 0.5 and 0.6
[D] 0.6 and 0.7

$$\frac{(.13)^2+(.21)^2}{(.39)^2+(.63)^2}$$

$$\frac{(2.4)^4+6(2.4)^2+9}{(2.4)^6+6(2.4)^4+9(2.4)^2} = \frac{1}{(2.4)^2}$$

1 min

$$\frac{1}{9} \div \frac{1}{(2.4)^2} = \frac{1}{3^2} \times (2.4)^2 = (.8)^2 = .64$$

ALGEBRA BASED SIMPLIFICATION FORMULAS

- $(a + b)^2 = a^2 + b^2 + 2ab$
- $(a - b)^2 = a^2 + b^2 - 2ab$
- $(a + b)^2 + (a-b)^2 = 2\,(a^2+b^2)$
- $(a + b)^2 - (a-b)^2 = 4ab$
- $(a + b)^2 = (a - b)^2 + 4ab$
- $(a - b)^2 = (a + b)^2 - 4ab$

#

$$(a+b)^2 = (a+b)\times(a+b)$$

$$a^2+ab+ab+b^2$$

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

79. *Simplify the following expression.*

निम्नलिखित व्यंजक को हल कीजिए।

$$(2.19)^2 + 2(2.19)(3.81) + (3.81)^2$$

a b

[A] 216 [B] 12

[C] 36 [D] 6

$= (2.19+3.81)^2$

$= 6^2$

80. *Simplify the following expression/*निम्नलिखित व्यंजक को हल कीजिए।

$(0.14 \times 0.14) - (2 \times 0.14 \times 5.14) + (5.14 \times 5.14)$

[A] 5.18 **[B]** 4

[C] 16 **[D]** 25

$= (.14 - 5.14)^2$

81. *For what value of A, will the expression $(13.56 \times 13.56 + 13.56 \times A + 0.04 \times 0.04)$ be a perfect square?*

A के किस मान के लिए व्यंजक $(13.56 \times 13.56 + 13.56 \times A + 0.04 \times 0.04)$ एक पूर्ण वर्ग होगा?

[A] 0.12 **[B]** 0.04

[C] 0.16 **[D]** 0.08

2×0.04

82. $Simplify\ (957 + 932)^2 - 4 \times 957 \times 932.$

$(957 + 932)^2 - 4 \times 957 \times 932.$ को सरल करें।

[A] 576

[B] 676

[C] 529

[D] 625

$= 25^2$

$(a+b)^2 - 4ab = (a-b)^2$

83. *Find* $\sqrt{98235^2 + 98235 + 98236}$?

$\sqrt{98235^2 + 98235 + 98236}$ ज्ञात कीजिये?

\# [A] 98236 ✓ [B] 98328 ✗

[C] 98765 ✗ [D] 98237 ✗

5+5+6

$= \sqrt{\cdots 6}$

$\sqrt{x^2+x+2x+1}$

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

$= \sqrt{(x+1)^2} = x+1 = 98236$

84. $\sqrt{22223^2 - 88888} = ?$

[A] 22222 **[B]** 22220

[C] 22221 **[D]** 22223

$22222 = x$

माना

$$\sqrt{(x+1)^2 - 4x} = (x-1)$$

$$= 22221$$

85. If $a = 0.4039$ then $\sqrt{4a^2 - 4a + 1} + 5a = ?$

(A) 2.2117 (B) 2.4039

(C) 2.8078 (D) 1.8273

(IB 2017)

$\sqrt{(2a)^2 - 2 \times 2a \times 1 + 1^2} + 5a$

$1 - 2a + 5a$

$= 1 + 3a$

$= 1 + 3 \times .4039$

$= 1 + 1.2117$

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

$\sqrt{a^2+b^2-2ab}$ → $a-b$ (if $a>b$)

$\sqrt{a^2+b^2-2ab}$ → $b-a$ (if $b>a$)

$$(+5)^2 = (-5)^2 = 25 \Rightarrow \sqrt{25} = +5 \text{ only}$$

86. Find $3111^2 + 2889^2$?

$3111^2 + 2889^2$ ज्ञात कीजिये?

[A] 18024642 **[B] 18024643** ✗

[C] 18062445 ✗ **[D] None of these**

#

$(3000+111)^2+(3000-111)^2$

$= 2\times(9000000+12321)$

$= 2\times 9012321$

87. *Simplify:*

$$\frac{(2018)^2}{(2017)^2+(2019)^2-2} = ?$$

[A] 1009

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

[C] $\frac{1}{3}$

[D] 23

$2\cdot(x^2+1)$

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

$$= \frac{x^2}{2x^2+2-2} = \frac{1}{2}$$