MAH-CET 2024 FOR

BCA BBA BBM BMS

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CRASH COURSE

DAY - 32

MATHS

MAH-CET 2024

VISION ACADEMY

FOR BBA/BBM/BMS/BCA

SIMPLIFICATION

Mock Test → [10 mock Test] PAID

NTA | CET

Minimum

OPINION

Community | WA | TG

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TOTAL QUESTIONS TODAY: 15

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2 mock Test- Comment

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90 mins

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SIMPLIFICATION

$\frac{40^2}{15^2} = \frac{2}{3}$

Calculation formula's

exp. / eqn

Get the simplified form of the expression or derive a final value.

BASIC MATHS CRASH COURSE

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Rule 1:

2^2 e^x

B **O** **D** **M** **A** **S**

Bracket **Of** **Division** **Multiplication** **Addition** **Subtraction**

(—)

[60 x 3 + 2] + 50 − 12

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BASIC MATHS

Rule 2: Algebraic Formulaes:

1. $(a+b)^2 = a^2 + 2ab + b^2$
2. $(a-b)^2 = a^2 - 2ab + b^2$
3. $a^2 - b^2 = (a+b)(a-b)$
4. $(x+a)(x+b) = x^2 + (a+b)x + ab$
5. $(a+b)^3 = a^3 + 3a^2b + 3ab^2 + b^3 \quad = a^3 + b^3 + 3ab(a+b)$
6. $(a-b)^3 = a^3 - 3a^2b + 3ab^2 - b^3 \quad = a^3 - b^3 - 3ab(a-b)$
7. $a^3 + b^3 = (a+b)(a^2 - ab + b^2)$
8. $a^3 - b^3 = (a-b)(a^2 + ab + b^2)$
9. $(a+b+c)^2 = a^2 + b^2 + c^2 + 2ab + 2bc + 2ac$
10. $\frac{a^3+b^3+c^3-3abc}{a^2+b^2+c^2-ab-bc-ac} = a + b + c$

Rule 3: Law of Indices / Exponents

1. $a^m \times a^n = a^{m+n}$

2. $\frac{a^m}{a^n} = a^{m-n}$

3. $(a^m)^n = a^{m \times n}$

4. $a^m \times b^m = (ab)^m$

5. $\frac{a^m}{b^m} = \left(\frac{a}{b}\right)^m$

6. $a^0 = 1$

7. $\sqrt[n]{a} = a^{\frac{1}{n}}$

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1. The value of $1+\cfrac{1}{1+\cfrac{1}{1+\cfrac{1}{9}}}$ is

(a) $\frac{10}{19}$

(b) $\frac{29}{19}$

(c) $\frac{29}{10}$

(d) $\frac{10}{9}$

$1+\frac{1}{9}$

$\frac{9+1}{9} = \frac{10}{9}$

$1+\cfrac{1}{1+\frac{9}{10}} = 1+\cfrac{1}{\frac{19}{10}}$

$= 1+\frac{10}{19}$

$= \frac{29}{19}$

2. The value of $\dfrac{(1.498+0.679)^2-(1.498-0.679)^2}{1.498\times 0.679}$ is

(a) 2.177 (b) 0.819
(c) 2 (d) 4

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

A B

$2+2$
$=2\times 2$
$4+4=2\times(4)$

$$= \frac{(1.498+0.679+1.498-0.679)\times(1.498+0.679-1.498+0.679)}{1.498\times 0.679}$$

$$= \frac{(2\times 1.498)\times(2\times 0.679)}{1.498\times 0.679}$$

$=2\times 2$
$=4$

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3. If $2^x = 4^y = 8^z$ and $\frac{1}{2x} + \frac{1}{4y} + \frac{1}{4z} = 4$, then the value of x is

(a) $\frac{7}{32}$ (b) $\frac{7}{16}$

(c) $\frac{7}{48}$ (d) none of these

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

$(a^m)^n = a^{mn}$

$2^x = 4^y = 8^z$

$2^x = (2^2)^y = (2^3)^z$

$2^x = 2^{2y} = 2^{3z}$

$x = 2y = 3z$

$x = 2y$ $\quad y = \frac{x}{2}$

$x = 3z$ $\quad z = \frac{x}{3}$

$\frac{1}{2x} + \frac{1}{2(\frac{x}{2})} + \frac{1}{4(\frac{x}{3})} = 4$

$\Rightarrow \frac{2\times1}{2\times2x} + \frac{2\times1}{2\times2x} + \frac{3}{4x} = 4$ $\quad \frac{7}{4x} = 4$

4. $\sqrt{\dfrac{9.5 \times 0.0085 \times 18.9}{0.0017 \times 1.9 \times 2.1}}$ is equal to

(a) 0.15 (b) 0.5

(c) 15 (d) 250

$$\sqrt{\frac{5\,9.5 \times 85\,5 \times 18.9\,9 \times 10000}{17 \times 1.9 \times 21 \times 10000}}$$

$$\sqrt{5 \times 5 \times 9}$$

$5 \times 3 = 15$

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5. The value of $\left(\dfrac{0.896 \times 0.752 + 0.896 \times 0.248}{0.7 \times 0.034 + 0.7 \times 0.966}\right)$ is

(a) 1.28 (b) 0.976
(c) 9.76 (d) 12.8

$\dfrac{ab + ac}{a(b+c)}$

$\dfrac{0.896(0.752 + 0.248)}{0.7\,(0.034 + 0.966)}$

$\dfrac{0.896 \times 10}{0.7 \times 10} = 1.28$

$\dfrac{0.896 \times 1000}{0.7\,(1.000)}$

$\dfrac{896}{700} = \dfrac{128}{100} = 1.28$

966
34
1000

6. The value of $\dfrac{1-x^4}{1+x} \div \dfrac{1+x^2}{x} \times \dfrac{1}{x(1-x)}$ is

(a) $\dfrac{1}{x}$ (b) $1+x$

(c) $1-x^2$ (d) 1

$\frac{a}{b} \div \frac{c}{d} \Rightarrow \frac{a}{b} \times \frac{d}{c}$

$1^4 - x^4$

$= (1^2)^2 - (x^2)^2$

$\Rightarrow a = 1^2 \quad b \Rightarrow x^2$

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

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

2-3

$1-x^2$

$= (1+x)(1-x)$

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

7. If $5x + 13 = 31$ then value of $\sqrt{(5x + 31)}$ =?

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

$5x = 31 - 13$

$5x = 18$

$\sqrt{18 + 31}$

$= \sqrt{49}$

$= 7$

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8. If x - 5 = 1, then what is the value of x + 7?

A. 5
B. 7
C. 8
D. 13

$x = 1 + 5 = 6$

$6 + 7$

9. What is the correct value of $\frac{5^4-5^3}{4}$?

A. 5^3
B. 1/5
C. 5^4
D. 5/4

$$= \frac{5^3 \cdot 5^1 - 5^3}{4}$$

$$= \frac{5^3(5-1)}{4}$$

$$= \frac{5^3 \times 4}{4}$$

$$= 5^3$$

$$a^n \times a^m = a^{(n+m)}$$

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10. If $a^x = b$; $b^y = c$; $c^z = a$ then what is the value of $xyz =$

A. c
B. a
C. b
D. 1

$$(a^x)^y = c$$

$$a^{xy} = c$$

$$(a^{xy})^z = a$$

$$a^{xyz} = a^1$$

$$xyz = 1$$

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11. 70% of 1680 + ?% of 1750 = 55% of 2820 – 886

A. 34
B. -28.4
C. -38.6
D. -29.2

$\frac{70}{100} \times 1680 + \frac{x}{100} \times 1750 = \frac{55}{100} \times 2820 - 886$

$1176 + \frac{x}{10} \times 175 = 1551 - 886$

$\frac{x}{10} \times 175 = -511 \times \frac{2}{35}$

-14.6×2

14.6

210

$\frac{161}{140}$

12. $14\frac{2}{7}\%$ of 91 + 9.09% of 198 − ? = 30

A. 1
B. 2
C. 3
D. 4
E. 5

$\frac{100}{7}\%$

$9 \times 10 = 90$
$9 \times 11 = 99$

$\frac{100}{7} \times \frac{1}{100} \times 91 + \frac{9.09}{100} \times 198 - x = 30$

$\frac{91}{7} + \frac{198}{11} - x = 30$

$31 - x = 30 + x$

$31 - 30 = x$

$x = 1$

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13. 28% of 85 + 13. 2 = ?

A. 35
B. 37
C. 39
D. 41

$\frac{28}{100} \times 85 + 13.2 =$

$\frac{119}{5} + 13.2$

$23.8 + 13.2$

37

14. $1200 \div 15 \times 25 + 437 = ?$

A. 2437
B. 2380
C. 2925
D. 2800

A

80

$\frac{1200}{15} \times 25 + 437$

$= 2000 + 437$

$= 2437$

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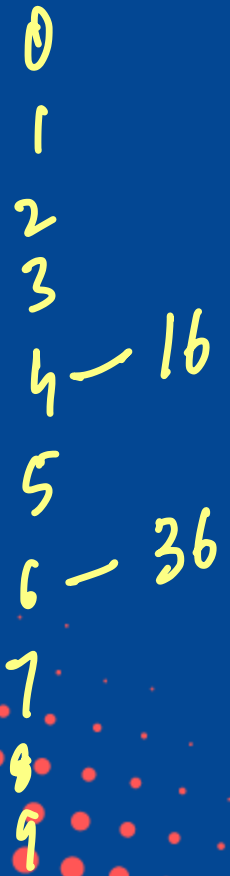
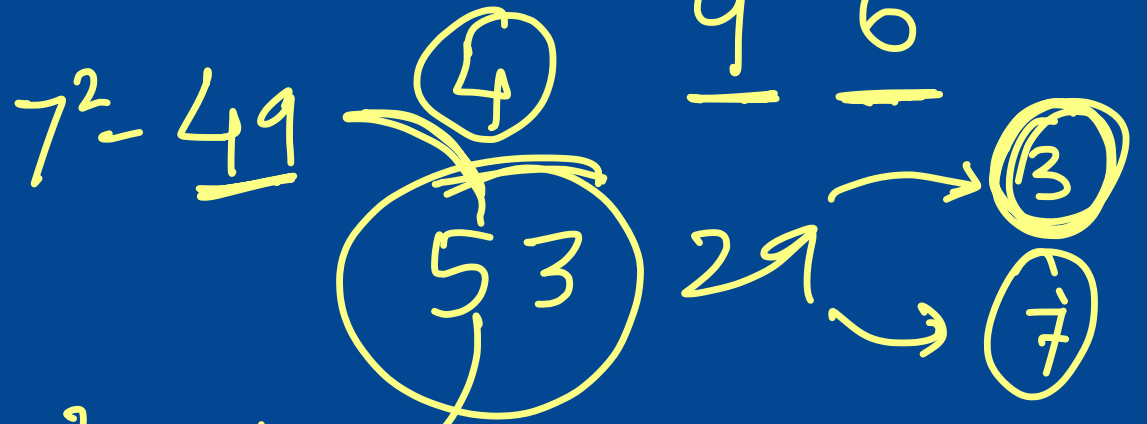
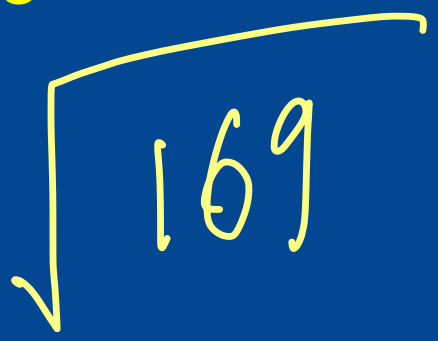
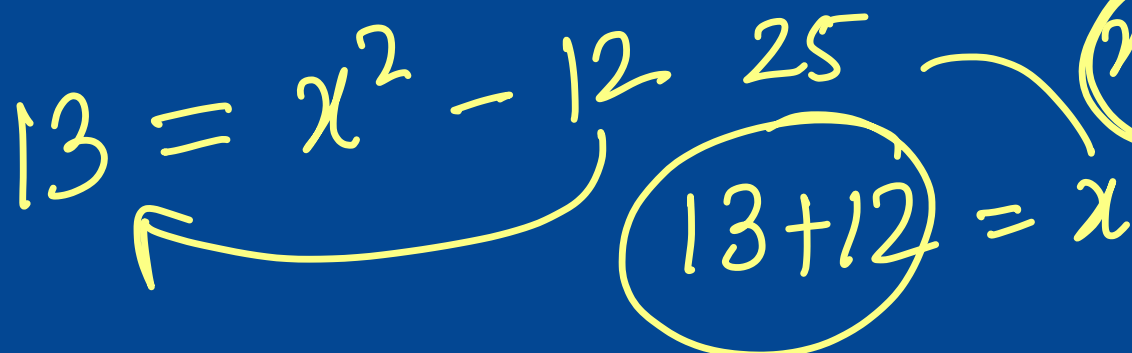
15. $\sqrt{\sqrt{9216} + \sqrt{5329}} = ?^2 - 12$

A. 7
B. 4
C. 5
D. 6
E. 8









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