(13) 9th unit

average of 4 questions per year 2007 – 2011

. which one is correct order of real numbers ? 1991

A. $\frac{2}{3} < \frac{4}{7} < \frac{5}{9}$ B. $\frac{2}{3} > \frac{4}{7} > \frac{5}{9}$ C $\frac{4}{7} < \frac{2}{3} < \frac{5}{9}$ D. $\frac{4}{7} > \frac{5}{9} > \frac{2}{3}$

If a, b and c are non-zero real numbers such that $a > b > c$ then which one is always true ? 1999

A. $ab > bc$ B. $a+b > b+c$ C $a-b > b-c$ D. $\frac{a}{b} > \frac{b}{c}$

If ~~a+b and c~~ a and b are non zero real numbers then which one is always true ? A. $ab > c$ B. $\frac{a}{b} < c$ C. $|a| < |c|$ D $\frac{a+b}{2} < \frac{b+c}{2}$ 2000

If a, b, c and d are integers such that $b > 0$, $d > 0$, $\frac{a}{b} < \frac{c}{d}$ then which one is necessarily in the interval $\left(\frac{a}{c}, \frac{c}{d}\right)$?

A. $\frac{ad+bc}{bd}$ B. $\frac{a+c}{bd}$ C. $\frac{ad+bc}{2bd}$ D. $\frac{ac}{2bd}$ 2001

which one doesn't represent set of all real numbers ?

A. The set of all non-terminating repeating decimals 2001

B. " " " " decimal numbers.

C. " " " rational and irrational numbers

D. B and C

According to the division algorithm, what should be the value of q and r so that, $215 = 11q + r$? short (resp) 2004

A. 18, 7 B. 20, -9 C. 19, 6 D. 6, 19.

which real number is found furthest from the origin of a number line ? A. $-\sqrt{8}$ B. $\sqrt{6.25}$ C. $\frac{5}{2}$ D. -2.76 2006

If P and q are prime numbers and c is Composite then which one is true ? T.F A. $P+q=c$ B. $P^2+q^2=c$ C. $Pq=c$ D. $P-q=c$ 2006

D. All other c ~~if~~

which one is not true about $\frac{236}{12}$? 2016

A. $236 = 19 \times 12 + 8$ B. $GCF(236,12) = GCF(12,8)$ C. $GCF(236,19) = GCF(236,8)$ D. $\frac{236}{12} = 19 + \frac{2}{3}$ 2007

The GCF of two numbers is 18 and the LCM is 108. If one number is 36 then the other is ~~2007~~

A. 27 B. 54 C. 64 D. 72

On a number line $3+\sqrt{2}$ is located between ~~2008~~ X .

A. 5 and 6 B. 3 and 4 C. 4 and 5 D 2 and 3

12. The GCF (160, 520) = — A. 160 B. 80 C. 40 D. 10

3. A farmer sold 57.36 kg of corn, when measured correct to two decimal places, which one is lower bound of the weight? A 57.36 B 57.359 C. 57.355 D. 57.35 2005

4. which one is true about composite numbers? 2005

A. Every c.n has three or more d/t factors
B. " " " at least two odd factors
C. Each c.n " more than one prime factor,
D. All c.n are even numbers except 9 and 15.

5. If two positive integers p and q are expressed as $p = ab^2$ and $q = a^3b$, where a and b are prime numbers then the LCM (p, q) is 2011 A a^3b^2 B. ab C. a^4b^3 D. a^2b^2

6. on a number line $\sqrt{35} - 6$ is located between 2005
A 1 and 2 B 0 and 1 C. -2 and -1 D. -1 and 0

7. which one is not true? 1996

A $6.05 < 6.0\overline{5}$ B. $\frac{1}{5} < \frac{2}{11}$ C $\frac{-3}{4} < \frac{-5}{7}$ D $1.\overline{03} > 1.00\overline{3}$

8. If a, b, and c are real numbers, then which one is necessarily true? A If $a < b$ and $c < 0$ then $ac > bc$ 1997
B for $a \in R$, $a \in R$ there is $b \in R$ such that $ab = 1$
C - for $a \in Q$ and $b \in$ irr. then ab is irrational
D. If $ac = bc$ then $a = b$

9. $\frac{15}{13}$ which one is Prime number? A. 161 B. 277 C. 711 D. 687 2004

10. If $x = 4.8\overline{12}$ then $x =$ — A. $\frac{4764}{999}$ B. $\frac{4764}{990}$ C. $\frac{44}{9}$ D. $\frac{4764}{900}$ 2004

11. For a natural numbers x, y, p and q, if p is factor of x and q is factor of y then, which one is not correct? 2005
A. pq is factor of xy
B. pq is " " "
C. q is factor of xy
D p is " " "

12. The Sum of five Consecutive numbers is 30, what is the LCM of these numbers?
A. [illegible] B. 10 C. [illegible] D. 1680

which one is not true ? 1993

A. $1.\dot{5} - 0.5 = \frac{19}{18}$ C. $0.\dot{4} \times 0.\dot{2} = 0.0\dot{8}$

B. $0.6\dot{} > 0.\overline{64}$ D. $4.\dot{6} - 2.\dot{3} = 2.\dot{3}$

1993

2. If $a = 1.323323332\ldots$ and $b = 0.101101110\ldots$ and $\frac{1}{ac-bc} = 27$ then $c =$ — A. $\frac{1}{33}$ B. $\frac{1}{30}$ C. $\frac{33}{100}$ D. 0.3

3. when the denominator of $\frac{\sqrt{5}-\sqrt{2}}{\sqrt{5}+\sqrt{2}}$ is rationalized it gives —

A. $\frac{3-2\sqrt{10}}{3}$ B. $\frac{7-2\sqrt{10}}{3}$ C. $\frac{3+2\sqrt{10}}{3}$ D. $\frac{7+2\sqrt{10}}{3}$ 1993

4. which one is an irrational number ? 1996

A. $(\sqrt{3}-\sqrt{2})^2 + 2\sqrt{6}$ (B) $\sqrt{4}\sqrt{8}$ C. 3.020020002 D. $\sqrt{(3\sqrt{2}+\sqrt{2})(3\sqrt{2}-\sqrt{2})}$

5. $\frac{2\sqrt{3}}{\sqrt{3}+\sqrt{2}} - \frac{\sqrt{3}}{\sqrt{3}-\sqrt{2}} =$ — A. $\sqrt{3}$ B. $3+\sqrt{6}$ C. $\frac{\sqrt{3}}{\sqrt{3}+\sqrt{2}}$ D. $3-3\sqrt{6}$ 1996

which one is irr rational ? A. $(\sqrt{3}-2)(2+\sqrt{3})$ 1997

B. $\frac{2\sqrt{5}-5}{\sqrt{5}} + \sqrt{20}$ C. $(1-\sqrt{7}) + (1+\sqrt{7})$ D. $\pi^2 - \pi$

$\frac{2+\sqrt{5}}{2-\sqrt{5}} =$ (incorrect) A. $9+4\sqrt{5}$ B. $-9-4\sqrt{5}$ C. -9 D. 2 1997

1998

$\frac{\sqrt{5+2\sqrt{6}}}{\sqrt{5-2\sqrt{6}}} =$ — A. $\frac{1}{\sqrt{49-20\sqrt{6}}}$ B. $\sqrt{49+20\sqrt{6}}$ C. $5+2\sqrt{6}$ D. $\frac{1}{5-2\sqrt{6}}$

choose

$\frac{\sqrt{2}}{\sqrt{7}-2\sqrt{2}} + \sqrt{126} =$ — A $2(2-\sqrt{14})$ B. $4(1+\sqrt{14})$ C. $2\sqrt{14}-4$ D. none

1998

$\frac{2\sqrt{3}+3\sqrt{2}}{\sqrt{2}+\sqrt{3}} =$ — A. $-\sqrt{6}$ B. 5 C. $5\sqrt{6}$ D $\sqrt{6}$ 2000

short

$\frac{(\sqrt{5-2\sqrt{6}})(\sqrt{5+2\sqrt{6}})}{\sqrt[3]{-125}} =$ — A. $-\frac{1}{5}$ B. $\frac{1}{5}$ C. $\frac{\sqrt{13}}{5}$ D $-\frac{\sqrt{13}}{5}$ 2000

If x is rational and y is irrational then which one is necc. true.

A xy is an irr no. C. $\frac{x}{y}$ is irr no 2003

B. $\frac{y}{x}$ is real no D. x+y is irr no

13. $\frac{3\sqrt{24}-2\sqrt{18}}{-\sqrt{2}} =$ — A. $6(1-\sqrt{3})$ B. $6(\sqrt{3}-1)$ C. $6\sqrt{2}(\sqrt{3}-1)$ D. none 2002

14. If $x = 4.8\overline{12}$ then $x =$ — 2004

A. $\frac{4764}{999}$ B. $\frac{4764}{990}$ C $\frac{44}{9}$ D. $\frac{4764}{900}$

5. $\frac{\pi}{3+\sqrt{5}} =$ — A $\sqrt{3}+1$

5. The rationalizing factor of the expression $\frac{7}{3+\sqrt{5}}$ is — 2004

A. $\frac{\sqrt{3}+\sqrt{5}}{\sqrt{3}+\sqrt{5}}$ B. $\frac{\sqrt{3}-5}{\sqrt{3}-5}$ C. $\frac{\sqrt{3}-\sqrt{5}}{\sqrt{3}-\sqrt{5}}$ D. $\frac{3-\sqrt{5}}{3-\sqrt{5}}$

16. $\frac{\sqrt{2}}{\sqrt{2}+\sqrt{5}} =$ — A $1-\sqrt{5}$ B. $\frac{\sqrt{10}-2}{3}$ C. $\frac{4+\sqrt{10}}{3}$ D. $\frac{\sqrt{5}-4}{3}$ 2006

7. Let $x = 3.1\overline{425}$, then $x =$ —

A. $\frac{15697}{4995}$ B. $\frac{3111}{990}$ C. $\frac{283}{90}$ D. $\frac{31394}{999}$ 2008

2008

8. $\frac{5\sqrt{2}+2\sqrt{3}}{5\sqrt{2}-2\sqrt{3}} =$ — A. $\frac{5\sqrt{2}+2\sqrt{3}}{5\sqrt{2}+2\sqrt{3}}$ B. $\frac{20\sqrt{6}+62}{19}$ C. $\frac{10\sqrt{6}+31}{19}$ D. none

9. Let a be rational and b be irrational which one is necessarily true? (T-F)

A. $3ab+3a$ is rational C. b^2-3a is rational

B. $2b-2(1+b-a)$ is " D. $\sqrt{3}a+2b$ is irrational.

10. The rationalizing factor of $\frac{5}{\sqrt{12}}$ is —.

A. $\frac{\sqrt{6}}{\sqrt{6}}$ B. $\frac{\sqrt{2}}{\sqrt{2}}$ C. $\frac{\sqrt{3}}{\sqrt{3}}$ D $\frac{5\sqrt{3}}{6}$

What is the value of $\frac{\frac{1}{x}-\frac{1}{y}}{\frac{1}{y}+\frac{1}{x}}$ if $x=2$ and $y=\frac{1}{2}$

or (c)

A -0.6 B -0.5 C 0.6 D 0.5

Simplification of power rule (6)

1993 c

The Simplified form of $\frac{1}{(16^{\frac{3}{5}})^{-\frac{2}{3}}} =$ — A. $\frac{1}{4}$ B. 4 C. 2 D. $\frac{1}{2}$

For $a \in \mathbb{R}$, and $n \in \mathbb{Z}^+$, which one is necessarily true?

A. $a^{-n} = \left(\frac{1}{a}\right)^n$ B. $a^n + a^n = a^{2n}$ (c) $a^n \cdot a^n = a^{2n}$ D. $a^0 = 1$ 2000

For a and b non-zero rece numbers and $m, n \in \mathbb{Z}^+$, which one is true? 2001

A. $a^m b^n = (ab)^{mn}$ B. $(ab^{-1})^n = (ab)^{-n}$ C. $\left(\frac{a}{b}\right)^{-n} = \frac{b^n}{a^n}$ D. $a^n b^n = (a+b)^n$

The simplified form of $\frac{5^2 \times 3^7 \times 10^3}{100 \times 81 \times 125} =$ — A 81 B. $\frac{27}{5}$ C. $\frac{15}{2}$ D. 54

2005

If $a, b \in \mathbb{R}^+$ and $m, n \in \mathbb{Z}^+$ then which one is correct? 2007

A $\sqrt[m]{b^n} = b^{\frac{m}{n}}$ B. $(\sqrt[m]{b})^n = b^{\frac{m}{n}}$ C. $\left(\sqrt[m]{\frac{a}{b}}\right)^n = \left(\frac{b}{a}\right)^{\frac{m}{n}}$ D. $\left(\sqrt[m]{\frac{a}{b}}\right)^n = \left(\frac{b}{a}\right)^{-\frac{n}{m}}$

The simplified form of $\sqrt[3]{-0.027} - (2^{-\frac{1}{2}})(1.25)^{0.5}$ is —

2009

A. 0.7 B 0.5 C. -0.5 (D) -1.1

$2^{\frac{3}{5}} =$ — A $\sqrt[3]{32}$ B. $\sqrt[5]{8}$ C. $\sqrt[3]{2}$ D. $\sqrt{2}$ 2011

$\left(\frac{2}{3}\right)^{-2}\left(\frac{2}{\sqrt{3}}\right)^4 \div \left(\frac{\sqrt{2}}{\sqrt[3]{3}}\right)^6 =$ — A. $\frac{16}{9}$ B. $\frac{1}{9}$ C. $\frac{5}{3}$ D. $\frac{9}{2}$ 2006

$(9.3 \times 10^5) \div (3 \times 10^{-2}) =$ — (A) 3.1×10^7 B. 3.1×10^3 C. 3.1×10^{-3} D. 3.1×10^{-7}

0, 11, 12 ~~Next two~~ Pon 3rd page

T/F

For any rece number a, the power $a^0 = 1$.