$$\frac{14^{n+4}+7^{n+3}\times 2^{n+3}}{13\times 14^{n}+14^{n}}$$

A. 2568
B. 2910
C. 2940
D. 3220

$n=0$

$$\frac{14^{3}+14^{2}}{14}$$

$14^2(14+1)$

196×15

2940

The value of the expression $\frac{4^n \times 20^{m-1} \times 12^{m-n} \times 15^{m+n-2}}{16^m \times 5^{2m+n} \times 9^{m-1}}$ is:

(A) 500

(B) 1

(C) 200

(D) $\frac{1}{500}$

$m = n = 1$

$\frac{4 \times 1 \times 1 \times 1}{16 \times 5^3 \times} = \frac{1}{125 \times 5}$

If $\frac{9^n \times 3^2 \times (3^{-n/2})^{-2} - (27)^n}{3^{3m} \times 2^3} = \frac{1}{27}$ then the value of (m – n) is:

(A) – 1

(B) 1

(C) 2

(D) – 2

$\frac{3^{3n}(9-1)}{3^{3m} \times 2^3} = 3^{-3}$

$\therefore -(m-n)$

$\frac{3^{3n} \times 3^2 - 3^{3n}}{3^{3m} \times 2^3}$

$\therefore$

$24^5 \times 80^7 \times 36^4 = 2^x \times 3^y \times 5^z$ find $x + y + z$

(A) 71
(B) 81
(C) 61
(D) 91

$(3^2 \times 2^2)^4$

$2^x \times 3^y \times 5^z$

$x = 3\times5 + 4\times7 + 2\times4 = 51$

$y = 5 + 8 = 13$

$z = 1\times7 = 7$

$25^{x-1} = 5^{2x-1} - 100$ find value of x.

(A) 3

(B) 2

(C) –1

(D) 4

$$100 = \frac{5^{2n}}{5} - \frac{5^{2n}}{25}$$

$$5^{2(x-1)} = 5^{2x-1} - 100$$

$$5^{2n} \cdot 5^{-2} = 5^{2n} \times 5^{-1} - 100$$

$$\frac{2^n+2^{n-2}}{2^{n+1}+2^n} = x, \text{ find } x.$$

(A) $\frac{3}{4}$

(B) $\frac{5}{12}$

(C) $\frac{7}{12}$

(D) $\frac{1}{2}$

$n = 0$

$$\frac{1+\frac{1}{4}}{2+1} = \frac{\frac{5}{4}}{3} = \frac{5}{12}$$

$$\frac{16\times2^{n+1}-4\times2^{n}}{16\times2^{n+2}-2\times2^{n+2}}$$

(A) $\frac{4}{5}$

(B) $\frac{3}{4}$

(C) $\frac{2}{3}$

(D) $\frac{1}{2}$

$\frac{28}{56} = \frac{1}{2}$

$n = 0$

$$\frac{16\times2-4}{16\times4-2\times4}$$

$$\left(\frac{x^a}{x^b}\right)^{a^2+ab+b^2} \times \left(\frac{x^b}{x^c}\right)^{b^2+bc+c^2} \times \left(\frac{x^c}{x^a}\right)^{c^2+ac+a^2}$$

(A) 1

(B) 2

(C) 3

(D) 0

$a = b = c = 1$

$(0.1111)^x = (324)^y = (8)^z$ find z $\frac{(x+2y)}{xy}$

(A) $\frac{2}{3}$

(B) $\frac{3}{2}$

(C) $\frac{2}{5}$

(D) $\frac{2}{9}$

$\left(\frac{1}{9}\right)^x = (18)^{2y} = 2^{3z} = K$

$\frac{1}{9} = K^{\frac{1}{x}} \mid 18 = K^{\frac{1}{2y}} \mid 2 = K^{\frac{1}{3z}}$

$\frac{1}{9} \times 18 = 2 \mid K^{\frac{1}{x}} \times K^{\frac{1}{2y}} = K^{\frac{1}{3z}}$ ∴

$(x\sqrt{x})^y = (y)^{x\sqrt{x}}$ & $x^6 = y^3$, find y

(A) $\frac{64}{27}$

(B) $\frac{27}{64}$

(C) $\frac{16}{9}$

(D) $\frac{256}{81}$

$x^{\frac{3}{2}})^y = (x)^{2x\sqrt{x}}$

$y^{\frac{1}{4}} = y^{\frac{3}{4}}$

$y =$

$\frac{3}{2}y = 2x^{\frac{3}{2}}$

$\frac{3}{2}y' = 2x\, y^{\frac{3}{4}}$

$x^6 = y^3$

$x = y^{\frac{1}{2}}$

$x^{\frac{3}{2}} = y^{\frac{3}{4}}$

$x^{x^{9/2}} = (x^{9/2})^x$, find x^7 = $\frac{81}{4}$

(A) $\frac{81}{4}$ ✓

(B) $\frac{9}{2}$

(C) $\frac{4}{81}$

(D) $\left(\frac{3}{4}\right)^7$

$x^{9/2} = x^{\frac{9x}{2}}$

$x^{9/2} = \frac{9}{2} \cdot x^1$ | $\left(x^{\frac{7}{2}} = \left(\frac{9}{2}\right)^2\right.$

$4^{x+3} \times 2^{x-3} - 128 = 0$ find x

(A) $\frac{1}{3}$

(B) $\frac{2}{3}$

(C) 1

(D) $\frac{4}{3}$

$2^{2n+6} \times 2^{n-3} = 2^7$

$2n+6+n-3 = 7$

$3n = 4$

$n = 4/3$

$e^{-n} = \frac{1}{e^n}$

$$\left(\frac{e^x+e^{-x}}{2}\right)^2 - \left(\frac{e^x-e^{-x}}{2}\right)$$

(A) 0

(B) 1

(C) 4

(D) 16

$n = 0$

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

$P^r P^{-1} P^S = \left(\sqrt{P^3}\right)^2$ and $P^{3/2} \cdot P^r = P^S \cdot P^{-1/2}$

Find $(r+s)^{r+s}$

(A) 27

(B) 64

(C) 4

(D) 256

$= (4)^4 = 256$

$r - 1 + S = ?$

$r + 5 = 4$

$4^4 = 256$

$$\left(\frac{81}{16}\right)^{-3} \times \left(\frac{25}{9}\right)^{-\frac{3}{2}} \div \left(\frac{5}{2}\right)^{-3}$$

(A) 1

(B) 2

(C) 0

(D) 4

$$\frac{2^9}{3^9} \div \left(\frac{2}{3}\right)^9$$

$$\frac{2^{(12)-3}}{3^{12}} \times \frac{3^{\cancel{4}\times\frac{3}{2}}}{\cancel{5^{2+\frac{3}{2}}}} \times \frac{\cancel{5^3}}{\cancel{2^3}}$$

The value of the expression $\frac{4^n \times 20^{m-1} \times 12^{m-n} \times 15^{m+n-2}}{16^m \times 5^{2m+n} \times 9^{m-1}}$ is:

(A) 500

(B) 1

(C) 200

(D) $\frac{1}{500}$

$m = n = 1$

$4 \times$

If $\frac{9^n \times 3^2 \times (3^{-n/2})^{-2} - (27)^n}{3^{3m} \times 2^3} = \frac{1}{27}$ then the value of (m – n) is:

(A) – 1

(B) 1

(C) 2

(D) – 2

$x^y = y^x$ then $\left(\frac{x}{y}\right)^{\frac{x}{y}}$

(A) $x^{\frac{x}{y}-1}$

(B) $x^{1-\frac{x}{y}}$

(C) $x^{\frac{y}{x}-1}$

(D) $x^{1-\frac{y}{x}}$

$a^m = b^n$

$b = a^{\frac{m}{n}}$

$x^y = (y)^x$

$y = x^{\frac{y}{x}}$

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

$\left(\frac{x}{x^{\frac{y}{x}}}\right)^{\frac{x}{y}}$

$\frac{x^{\frac{x}{y}}}{x^1}$