Exponents: Worksheet -6

1) The value of $\frac{x+y+z}{x^{-1}y^{-1}+y^{-1}z^{-1}+x^{-1}z^{-1}}$ is [ ]

a) $\frac{1}{xyz}$ b) $\frac{1}{xy}+\frac{1}{yz}+\frac{1}{zx}$ c) xyz d) xy + yz + zx

2) If $3^x = 270$ then 3^{x-3} = [ ]

a) $\frac{1}{10}$ b) 10 c) 5 d) $\frac{1}{5}$

3) If $\left(\frac{5}{4}\right)^{-5} x \left(\frac{5}{4}\right)^{-10} = \left(\frac{5}{4}\right)^{3x}$ then x = [ ]

a) 5 b) – 3 c) – 5 d) 3

4) If $2^n = 64$ then 2^{3n-2} = [ ]

a) $(16)^2$ b) $(16)^3$ c) $(16)^4$ d) $(16)^5$

5) Which of the following is true? [ ]

a) $5^{10} > 3^{15}$ b) $5^{10} < 3^{15}$ c) $5^{10} = 3^{15}$ d) $5^{10} = 3^{15} = 15^5$

6) $(0.0001)^{\frac{3}{4}}$ = [ ]

a) 0.001 b) 0.0001 c) 0.00001 d) 0.1

7) If $\sqrt{5} \simeq 2.236$ then the value of $\frac{100}{\sqrt{125}}$ correct to two places of decimal = [ ]

a) 8.943 b) 2.921 c) 8.944 d) 2.922

8) $(8)^{0.3} \times (8)^{0.03} \times (8)^{0.003} \times \ldots\ldots\ldots\ldots \infty$ = _____ [ ]

a) 1 b) 2 c) 3 d) 27

9) $(27)^{0.3} \times (27)^{0.03} \times (27)^{0.003} \times \ldots\ldots\ldots\ldots \infty$ = _____ [ ]

a) 1 b) 2 c) 3 d) 27

10) If $5^{x+2} = 625$ then 5^{x-2} [ ]

a) 5 b) 25 c) 1 d) – 5

11) If $2^{2x} + 2^{x+2} - 32 = 0$ then x = [ ]

a) 1 b) 2 c) -2 d) 3 e) None

12) If $a \geq 1$, $b \geq 1$, and $_{a}b^{2} = b^{a}$ is satisfied by the ordered pair [ ]

a) (3, 27) b) (27, 3) c) (64, 4) d) (4, 64) e) None

13) If $2^4 + 2^4 + 2^4 + 2^4 = 2^x$ then the value of x is [ ]

a) 2 b) 3 c) 6 d) 5

14) $\sqrt{(2008)^{2008}}$ = [ ]

a) $(2008)^{2001}$ b) $(2008)^{2003}$ c) $(2008)^{1004}$ d) none

15) If $x = 3^{14}$, $y = 2^{21}$ then [ ]

a) $x < y$ b) $x > y$ c) $x = y$ d) none