SURDS & INDICES, SIMPLIFICATION

1. Find $\left(17^3 \times 17^{5/2} \times (17^3)^{3/2}\right) \times \left(17^{10/7} \times (17^5)^{3/35} \times (17^6)^{1/7}\right)^{-1} = ?$

2. What is the value of $\frac{(5^{-2} \times 10^{-4})}{2^{-5} \times 5^{-6}}$

   a) 0 b) 2 c) 5 d) 10

3. What is the value of i^{34}?

   a) i b) -i c) 0 d) 1

4. What is the value of x in the expression $\left[\left(\sqrt{3025}\right) + \sqrt{(0.0678 - x)}\right] = 55.26$?

   a) 10^{-3} b) 10^{-4} c) $2*10^{-3}$ d) $2*10^{-4}$

5. Evaluate $(4.56^3+5.44^3)/(4.56^2-4.56*5.44+5.44^2)$

   a) 0.88 b) -0.88 c) 1 d) 10

6. Write $\sqrt{1008}$ as a mixed surd

   a) $12\sqrt{7}$ b) $7\sqrt{14}$ c) $7\sqrt{12}$ d) $7\sqrt{13}$

7. If the equation $x^2-2(k-1)x+(9/2)k=0$ has two identical roots then the values of k are

   a) k = 1, 2 b) k =2, 1/2 c) k=3, ½ d) None of these

8. If $2^{x+y} = 2*2^{1/2}$ and $2^{x-y} = 2^{1/2}$, then the value of x is

9. What is the value of (a, y) in $(13^{-20} - a*13^y) = 168 * 13^{-22}$?

   a) (1, 2) b) (0, 1) c) (1, -22) d) (-1, 22)

10. What is the value of $(5^2 * 25^8/625)^{2/7}$?

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a) 5 b) 25 c) 625 d) None of these

11. What is the value of the expression $\sqrt[3]{\sqrt{0.000729}}$?

a) 0.03 b) 0.3 c) 0.3 d) 0.27

12. If x is a positive number and $y = x^2$, then which of the given statements is true

a) y is always more than x b) x is always more than y

c) x is always equal to y d) None of the above

13. If $2^{2x-1} = \frac{1}{8^{(x-3)}}$, then x =?

a) 0 b) 2 c) 3 d) -2

14. Find n if $(2^{228} / 2^n) = 512$?

a) 219 b) 224 c) 204 d) 237

15. If a=0.24 and b=1.76, then compute the following expression

$a^4+4ab^3+6a^2b^2+4ab^3+b^4$

a) 2 b) 4 c) 8 d) 16

16. Simplify $(144^{-3/2})^{-1/6}$

a) 2 b) 3 c) $2\sqrt{3}$ d) $3\sqrt{2}$

17. What is the value of $(5^{-2} \times 10^{-4}) / (2^{-5} \times 5^{-6})$?

a) 1/2 b) 2 c) 4 d) None of these

18. Which of the two is greater $\sqrt[12]{12}$ or $\sqrt[6]{6}$

a) $\sqrt[12]{12}$ b) $\sqrt[6]{6}$

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19.0.35353535…. x 198.00000=?

20.Solve $(4^{-1} - 6^{-1})^2$