

INTERNATIONAL INDIAN SCHOOL BURAIDAH

STD VII -- MATHS WORKSHEET(II TERM)

L-13 Exponents & Powers

1. Find the value of :

(a) 3^4 (b) 2^5 (c) 10^3 (d) 5^4

2. Express 243 as a power of 3

3. Express 32 as a power of 2

4. Express the following numbers as a product of power of prime factors:

(a) 500 (b) 108 (c) 3600 (d) 1225

5. Which is greater ?

(a) 2^5 or 5^2 (b) 2^9 or 9^2

6. $(-1)^{\text{odd number}} = \underline{\hspace{2cm}}$

$(-1)^{\text{even number}} = \underline{\hspace{2cm}}$

7. Express the following in exponential form:

(a) $9 \times 9 \times 9$ (b) $x \times x$ (c) $y \times y \times y \times y \times y$

(d) $4 \times 4 \times a \times a \times a$ (e) $x \times x \times x \times y \times y \times y \times z \times z \times z \times z$

8. Simplify :

(a) 3×4^2 (b) $8^2 \times 5^2$ (c) $2^3 \times 10^2$ (d) $4^3 \times 3^2$

9. Compare:

(a) 3.5×10^4 and 3.75×10^8

(b) 2.09×10^6 and 1.99×10^{10}

10. Evaluate:

(a) $(-3)^3$ (b) $(-5)^4$ (c) $(-2)^2 \times (-4)^3$ (d) $(-5)^2 \times (-1)^6$

11. Write in the exponential form :

- (a) $11^7 \div 11^6$ (b) $y^{70} \div y^3$ (c) $(9^6)^4$ (d) $(x^{25})^4$
(e) $19^3 \times 19^7$ (f) $m^2 \times m^3$ (g) $x^4 \times x^3 \times x^2$
(h) $(-y)^4 \times (-y)^3$ (i) $(100^3)^4$ (j) $(100^3)^4$ (k) $(15^2)^{10}$

12. Evaluate :

(a) $\frac{27^2 \times 8^2 \times 10^4}{5^3 \times 3^6 \times 2^6}$ (b) $\frac{1^2 + 2^3 + 3^4}{1^8 + 2^0 + 3^0}$

13. Simplify the following and express in the exponential form:

(a) $\frac{5^2 \times 25 \times 3^3}{15 \times 9}$ (b) $[(9^2)^5 \times 9^3] \div 9^9$ (c) $\frac{2^2 \times 8 \times 7^3}{35 \times 49}$
(d) $27^4 \div 3^5$ (e) $\frac{16 \times 2^3}{32 \times 4}$ (f) $(a^3 \times a^2)^4$
(g) $\frac{a^3 b^7}{a^2 b^5}$ (h) $\left[\frac{3^4 \times 27}{81} \right]^2$ (i) $(a^4 \times b^3 \times b^2 \times b^1)^7$
(j) $\left(\frac{x^6}{x^2} \right) \div (x^2)^2$

14. Write in the expanded exponential form:

(a) 8379 (b) 108456 (c) 560435

15. Express the following in the standard form:

(a) 3073 (b) 789402 (c) 104000000 (d) 13200

16. Write the number for the following:

(a) $6 \times 10^6 + 3 \times 10^6 + 5 \times 10^2 + 8 \times 10^0$
(b) $8 \times 10^6 + 4 \times 10^4 + 5 \times 10^0$
(c) $3 \times 10^5 + 9 \times 10^2 + 6 \times 10^1 + 9 \times 10^0$
(d) $9 \times 10^4 + 8 \times 10^3 + 2 \times 10^1 + 5 \times 10^0$

17. Express 8^3 with base 2

18. Express 25^4 with base