

INTERNATIONAL INDIAN SCHOOL
BURAIDAH

Worksheet For The Academic Year 2023-24

CLASS: VIII SUBJECT: Mathematics DATE: 26/11/2023
LESSON-12 Exponents & Powers

1) Find the value of:

a) 2^4 b) $(\frac{2}{5})^5$ c) $(-7)^3$ d) 10^{-3}

2) Write the multiplicative inverse of:

a) $(\frac{-7}{9})^4$ b) $(\frac{5}{9})^{-3}$ c) 8^5 d) 9^{-2}

3) Write the following with positive powers.

a) 5^{-4} b) $(\frac{3}{5})^{-2}$ c) $(\frac{1}{3})^{-3}$ d) 3^{-5}

4) $(-1)^{\text{odd no.}} = \underline{\hspace{2cm}}$

5) $(-1)^{\text{even no.}} = \underline{\hspace{2cm}}$

6) Simplify using laws of exponents.

a) $2^4 \times 2^5 \times 2$ b) $4^8 \div 4^3$ c) 91^0 d) $3^2 \times 5^2$ e) $12^3 \div 6^3$

f) $(7^3)^2$ g) $2^4 \div 4^4$ h) $10^{10} \times 10^{10}$

7) Simplify and express as positive powers.

a) $(2^{-1} \times 2^{-9}) \times (\frac{-2}{3})^5$ b) $(\frac{2}{9})^{-2} \div (\frac{2}{9})^{-3} \times (\frac{2}{9})^{-4}$

c) $(\frac{25}{12})^{-22} \times (\frac{6}{5})^{-22}$ d) $\{(\frac{7}{8})^2\}^{-2}$ e) $\frac{1}{(-3)^{-2}}$ f) $(3^{-1} - 4^{-1})^{-1}$

8) Find the value of m:

$$(\frac{5}{9})^{-7} \div (\frac{5}{9})^{-2} = (\frac{5}{9})^{2m-3}$$

9) Simplify:

a) $\frac{2^5 \times 6^3 \times 10^2}{4^2 \times 3^2 \times 5^2}$

b) $\frac{a^5 \times 7^3 \times 15^4 \times 2^4}{a^2 \times 14^2 \times 5}$

c) $\frac{625 \times 32 \times 729}{20^2 \times 3^3}$

10) Express in the standard form:

- a) 1234500000 b) 3765.43 c) 12.222 d) 0.0000009
e) 0.000000000000456

11) Express in the usual form:

- a) 2.97×10^{-5} b) 3.78×10^7 c) 3.003×10^9 d) 4.4×10^{-4} e) 1.234×10^{-3}

12) Expand the following:

- a) 65.834 b) 1234.567 c) 7.5432

ANSWERS

1) a) 16 b) $\frac{32}{3125}$ c) -343 d) $\frac{1}{1000}$
4) -1 5) 1
6) a) 2^{12} b) 4^5 c) 1 d) 7^6 e) 15^2 f) $(\frac{1}{2})^4$ g) 2^3 h) 10^{20} or 100^{10}
8) $m = -1$
10) a) 1.234×10^9 b) 3.76543×10^3 c) 1.2222×10
d) 9×10^{-7} e) 4.56×10^{-12}