



INDIAN SCHOOL NIZWA- WORKSHEET

Chapter 2 Power Play

Name:

Class :VIII Sec:





Multiple choice questions

- The distance between the Sun and Saturn is 14,33,50,00,00,000 m. Express it in scientific notation.
A. 1.4335×10^{12} B. 1.4335×10^{11} C. 0.14335×10^{12} D. 14.335×10^{10}
- The value of $(4^2 + 3^3 - 7^5)^0 =$ _____
A. 1 B. 0 C. -1 D. 63
- If $24^2 = 576$, then $(0.024)^2 =$ _____
A. 5.76 B. 0.00576 C. 57.6 D. 0.000576
- The units digit in the value of $3^{256} \div 3^{51}$ is _____
A. 3 B. 9 C. 7 D. 1
- Assertion (A): $a^0 = 1$ for any non-zero number a.
Reason (R): Dividing a number by itself gives 1.
(a) Both A and R are true, and R is the correct explanation of A.
(b) Both A and R are true, but R is not the correct explanation of A.
(c) A is true, but R is false.
(d) A is false, but R is true.
- Assertion (A): $(a + b)^m = a^m + b^m$.
Reason (R): Exponents can be distributed over multiplication.
(a) Both A and R are true and R is the correct explanation of A
(b) Both A and R are true but R is not the correct explanation of A
(c) A is true but R is false
(d) A is false but R is true
- There are about 250 million stars in a small galaxy. If each star has about 8 planets, find the total number of planets in that galaxy and express it in scientific notation.
- Each cell in the human body contains about 3×10^9 DNA base pairs. If a small organism has 5×10^6 cells, find the total number of DNA base pairs in the organism.
- Simplify in exponent form:
 - $(5^6 \times 5^3)^{-2} \div (5^{-2})^2$
 - $x^2 y^4 \times (x^3 y)^3$
 - $\frac{(2^7)^2 \times 2^{-3}}{2^5}$
 - $(p^3 q^4)^2 \div (p^4 q^2)$
 - $(7^{-2} \times 7^5) \div 7^3$
- Express in standard form: $4.8 \times 10^5 + 6.2 \times 10^4$
- Match the following:

Number name	Number
I. Quadrillion	A. 10^{100}
II. Million	B. 10^{12}
III. Quintillion	C. 10^6
IV. Trillion	D. 10^{18}
V. Googol	E. 10^{15}

19. **Case study based question:**

A standard VIII mathematics teacher has four articles in the classroom whose lengths are given in exponential form. The challenge is to determine their relative sizes. The lengths of the four articles are:

			
I) $3 \times 16^{\left(\frac{3}{4}\right)}$ cm	II) $2 \times 27^{\left(\frac{2}{3}\right)}$ cm	III) $4^0 \times 16^{\left(\frac{3}{4}\right)}$ cm	IV) $2 \times 9^{\left(\frac{3}{2}\right)} \times 3^{-1}$ cm

Answer the following questions based on the above information:

- What is the length of the 1st article?
- What is the sum of lengths of all the articles?
- What is the product of lengths of the first and third article?
- What is the ratio of lengths of 1st and 4th articles?
- Which are the articles whose lengths are equal?

20. **Case study based question:**

Students used microorganisms that double every hour. Initially, there were 2^4 microorganisms.

Answer the following questions based on the above information:

- How many microorganisms will there be after 3 hours? (Use exponents)
- Write the expression for the number after n hours.
- If the population reaches 2^{10} , how many hours have passed?
- By what factor does the population increase from 4 hours to 6 hours?

21. **Revision:**

- Add: 23.45, 7.608, 0.75, and 9.003
- If $345.6 \div 24 = 14.4$, then find the value of $3456 \div 0.24$.
- Divide: $6 \frac{2}{3} \div 3 \frac{3}{4}$
- Multiply: 18.25×4.08
- Simplify: $(-2)/9 \times 3/(-6) \times (-18)/5$
- Subtract: $(-5)/12$ from $7/8$
- Find the LCM of 20, 36 and 48
- Find: $(-72) \div (-9) \times (-15) + 40$
- Find: $30 \times (-8) \times (-5) \times (-3)$