

INTERNATIONAL INDIAN SCHOOL BURAIDAH

Worksheet for the Academic Year 2023-24

CLASS: VII SUBJECT: MATHEMATICS DATE:10-02-2024

LESSON: 13 EXPONENTS AND POWERS

- Express the following numbers in the exponential form.
 - $5 \times 5 \times 5 \times 5$
 - $4 \times 4 \times a \times a \times a \times a$
 - $7 \times a \times a \times d \times d \times d \times d$
 - $y \times y \times x \times x \times z \times z$
- Find the value of:
 - $(10)^4$
 - $(-2)^6$
 - $(-4)^2 \times (-3)^3$
- Express the following numbers as a power of prime factors:
 - 108
 - 1225
 - 5488
- Which one is greater:
 - 1.3×10^8 and 1.37×10^6
 - 5.09×10^6 and 3.90×10^9
- Simplify the following using laws of exponents:
 - $(2^3)^2$
 - $3^4 \times 2^4$
 - $2^2 \times 2^2$
 - $p^3 \times p^5 \times p^2$
 - $6^3 \div 3^3$
 - $5^8 \div 5^2$
 - $(x^2)^3 \times (y^3)^2$
 - $(200)^x \times 50^x$
- Simplify:
 - $\frac{12^4 \times 9^2 \times 4}{6^4 \times 8^2 \times 81}$
 - $\frac{5^2 \times 25 \times 3^3}{15 \times 9}$
 - $\frac{2^2 \times 8 \times 7^3}{35 \times 49}$
 - $\frac{3^4 \times 27}{81}$

7. Simplify the following by factorization and express in the exponential form:
- 21×125
 - 64×200
 - 162×256
8. Write the numbers in the expanded form:
- 81
 - 70165
 - 696
9. Find the number from each of the following expanded forms:
- $5 \times 10^5 + 3 \times 10^2 + 2 \times 10^1 + 1 \times 10^0$
 - $4 \times 10^6 + 7 \times 10^4 + 5 \times 10^0$
 - $9 \times 10^5 + 8 \times 10^3 + 7 \times 10^2 + 6 \times 10^1 + 5 \times 10^0$
10. Express the following numbers in the standard form:
- 27800
 - 5894100000
 - 25.952

Answers :

- | | | | |
|---------------------------------------|--|--|------------------|
| 1.a) 5^4 | b) $4^2 \times a^4$ | c) $7 \times a^2 \times d^4$ | d) $x^2y^2z^2$ |
| 2. a) 10000 | b) 64 | c) -432 | |
| 3. a) $2^2 \times 3^3$ | b) $5^2 \times 7^2$ | c) $2^4 \times 7^3$ | |
| 4. a) 1.3×10^8 | b) 3.90×10^9 | | |
| 5. a) 64 | b) 1296 | c) 16 | d) p^{10} e) 8 |
| f) 15625 | g) $(xy)^6$ | h) $(10000)^x$ | |
| 6. a) 1 | b) 125 | c) $\frac{32}{5}$ | d) 27 |
| 7. a) $3 \times 5^3 \times 7$ | b) $2^9 \times 5^2$ | c) $2^9 \times 3^4$ | |
| 8. a) $8 \times 10^1 + 1 \times 10^0$ | | b) $7 \times 10^4 + 1 \times 10^2 + 6 \times 10^1 + 5 \times 10^0$ | |
| | c) $6 \times 10^2 + 9 \times 10^1 + 6 \times 10^0$ | | |
| 9. a) 500321 | b) 4070005 | c) 908765 | |
| 10. a) 2.7800×10^4 | b) 5.8941×10^9 | c) 2.5952×10^1 | |
