

CLASS 8

MATHS

EXTRA QUESTIONS

Extra Questions: Class 8 Maths Chapter 2 Power Play

Practice questions beyond the textbook exercises, testing deeper understanding of exponent laws and scientific notation for Class 8 Maths Chapter 2: Power Play.

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1 (Assertion-Reason). Assertion: $5^0 = 1$. Reason: Any non-zero number raised to the power zero equals 1.
Solution: Both true, and the reason correctly explains the assertion — this follows from $a^n \div a^n = a^0 = 1$ for any $a \neq 0$.

2 (Numerical). Simplify: $(2^3 \times 2^{-5}) \div 2^{-4}$.
Solution: $2^3 \times 2^{-5} = 2^{-2}$; then $2^{-2} \div 2^{-4} = 2^2 = 4$.

3 (Numerical). Write 45,00,000 and 0.0000063 in standard (scientific) form.
Solution: $45,00,000 = 4.5 \times 10^6$; $0.0000063 = 6.3 \times 10^{-6}$.

4 (Applied). Light travels at 3×10^8 m/s. How far does it travel in 10^2 seconds? Express in scientific notation.
Solution: $3 \times 10^8 \times 10^2 = 3 \times 10^{10}$ m.

5 (Assertion-Reason). Assertion: $(-3)^4$ is positive. Reason: A negative number raised to an even power is always positive.
Solution: Both true, and the reason correctly explains the assertion: $(-3)^4 = 81$, positive, since the exponent 4 is even.

6 (Synthesis). Is 5^n ever equal to 3^n for a positive integer $n > 0$? Explain.
Solution: **No** — since 5 and 3 are different prime bases, 5^n and 3^n can never be equal for any positive integer n (their prime factorisations never match).

7 (Numerical). Simplify: $(2^5)^2 \div (2^2)^3$.
Solution: $(2^5)^2 = 2^{10}$; $(2^2)^3 = 2^6$; $2^{10} \div 2^6 = 2^4 = 16$.

8 (Applied). A bacteria culture doubles every hour, starting from 1 bacterium. Write the population after 12 hours as a power of 2, and find its value.
Solution: After 12 hours: $2^{12} = 4096$ bacteria.

9 (Assertion-Reason). Assertion: 10^{-3} is smaller than 10^{-2} . Reason: For powers of 10, a more negative exponent gives a smaller value.
Solution: Both true and the reason correctly explains it: $10^{-3} = 0.001 < 10^{-2} = 0.01$.

10 (Numerical). Which is greater: 6^3 or 3^6 ?
Solution: $6^3 = 216$; $3^6 = 729$. **3^6 is greater.**