



חזקות - פתרונות

$$1. \quad \frac{36^3}{12^3} = \left(\frac{36}{12}\right)^3 = 3^3 = 27$$

$$2. \quad \frac{5^3}{5^6} = 5^{-3}$$

$$3. \quad x \cdot x^2 \cdot x^3 \cdot x^4 = x^1 \cdot x^2 \cdot x^3 \cdot x^4 = x^{1+2+3+4} = x^{10}$$

$$4. \quad \frac{A^{\frac{3}{4}} \cdot A^{\frac{1}{2}}}{A^{\frac{1}{4}}} = \frac{A^{\frac{3}{4}} \cdot A^{\frac{2}{4}}}{A^{\frac{1}{4}}} = \frac{A^{\frac{3+2}{4}}}{A^{\frac{1}{4}}} = \frac{A^{\frac{5}{4}}}{A^{\frac{1}{4}}} = A^{\frac{5-1}{4}} = A^{\frac{4}{4}} = A^1 = A$$

$$5. \quad \frac{Q^{\frac{1}{2}} \cdot Q^{\frac{3}{2}} \cdot Q^{\frac{5}{2}}}{Q^{\frac{1}{4}} \cdot Q^{\frac{5}{4}}} = \frac{Q^{\frac{1+3+5}{2}}}{Q^{\frac{1+5}{4}}} = \frac{Q^{\frac{9}{2}}}{Q^{\frac{6}{4}}} = \frac{Q^{\frac{9}{2}}}{Q^{\frac{3}{2}}} = Q^{\frac{9-3}{2}} = Q^{\frac{6}{2}} = Q^3$$

$$6. \quad \left(\frac{1}{2}\right)^3 \cdot 4^3 = \left(\frac{1}{2} \cdot 4\right)^3 = \left(\frac{4}{2}\right)^3 = (2)^3 = 8$$

$$7. \quad \frac{27^2}{3^2} = \left(\frac{27}{3}\right)^2 = 9^2 = 81$$

$$8. \quad \frac{\left(\frac{1}{3}\right)^3 \cdot 36^3}{3^3} = \left(\frac{\left(\frac{1}{3}\right) \cdot 36}{3}\right)^3 = \left(\frac{36}{3}\right)^3 = \left(\frac{12}{3}\right)^3 = 4^3 = 64$$

$$9. \quad \left((x^4)^6\right)^{\frac{1}{8}} = x^{4 \cdot 6 \cdot \frac{1}{8}} = x^{\frac{4 \cdot 6}{8}} = x^{\frac{24}{8}} = x^3$$