Positive and Negative Integer Exponent Problems

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Simplify each of the following. Do not leave negative exponents in your final answer. Do not use a calculator.

(1) 9^2

(2) $\left(2\,x^3\right)^3$

(3) 6^3

(4) $x^2\,x^3$

(5) $s^8\,s^{11}$

(6) $\left(x^3\right)^2$

(7) $2 \cdot 3^2$

(8) -5^2

(9) $-x^{-2}$

(10) $2\,x^3$

(11) -3^3

(12) x^{-2}

(13) 5^3

(14) $\left(\left(x^2\right)^3\right)^4$

(15) $2\left(x^2\right)^3$

(16) 8^{-1}

(17) $\dfrac{n^4}{n^{12}}$

(18) $3^2 \cdot 2^3$

(19) $2\,x^{-1}$

(20) $\dfrac{x^{12}}{x^3}$

(21) $\dfrac{x^7}{2\,x^5}$

(22) 4^{-3}

(23) $\left(7\,x^5\right)^2$

(24) $2^{-1}\,x^4$

(25) $3\,x^{-4}$

(26) $x^5\,x^2$

(27) $a^7\,a^{-3}$

(28) $3\,a\left(2\,a^5\right)$

(29) $-x^{-4}$

(30) $(-9)^2$

(31) $\dfrac{x^6}{x^{-3}}$

(32) $\dfrac{4\,x^{12}}{6\,x^6}$

(33) $3\,x^4\left(-4\,x^{-3}\right)$

(34) $3\,x^3\,x^2 + 2\,x^5$

(35) $2^{-3} + 3^{-1}$

(36) $\dfrac{4^3}{2^2}$

(37) $x^{-3}\,x^6$

(38) $\dfrac{z^{-3}}{z^2}$

(39) $-4^2\,x^3$

(40) $\left(\dfrac{2}{3}\right)^2$

(41) $\left(\dfrac{x}{3}\right)^3$

(42) $\left(\dfrac{4}{8}\right)^6$

(43) $\left(x^3\,y^2\right)^3$

(44) $\left(6\,x^8\,y\right)^2$

(45) $\left(2\,x^3\,y\right)^4\left(3\,x^5\,y\right)^2$

(46) $\dfrac{b^{-3}}{b^{-5}}$

(47) $5 - 3^2$

(48) $4^2 - 3^2$

(49) $\dfrac{8^2}{2^3}$

(50) $3\,x^{-2}$

(51) $\dfrac{c^{-6}}{c^{-8}}$

(52) $\dfrac{-2\,x^2}{x^{-3}}$

(53) $x^a\,x^{2\,a}$

(54) $\left(x^5\right)^{-3}$