

Name: _____

Laws of Exponents Worksheet

Simplify using the laws of exponents

① $x^5 \cdot x^7$

② $(3x^3y^5) \cdot (-6y^5)$

③ $2(6a^2)^5$

④ $(2^2x^3y^4)(4^2x^2y^{-7})$

⑤ $5x^2y(2x^4y^{-3})$

⑥ $\frac{22y^6z^8}{2yz^{-7}}$

⑦ $\frac{ab^8}{a^3b^4}$

⑧ $\left(\frac{3a^2b^7}{a}\right)^5$

⑨ $\left(\frac{5a^{13}b^5c^2}{3 \cdot 5^2}\right)^0$

⑩ $(a^3 \cdot a^{-2})^4$

Laws of Exponents Worksheet

Answers

① $x^5 \cdot x^7$

x^{12}

② $(3x^3y^5) \cdot (-6y^5)$

$-18x^3y^{10}$

③ $2(6a^2)^5$

$15552a^{10}$

④ $(2^2x^3y^4)(4^2x^2y^{-7})$

$\frac{6x^5}{y^3}$

⑤ $5x^2y(2x^4y^{-3})$

$\frac{10x^5}{y^2}$

⑥ $\frac{22y^6z^8}{2yz^{-7}}$

$11y^5z^{15}$

⑦ $\frac{ab^8}{a^3b^4}$

$\frac{b^4}{a^2}$

⑧ $\left(\frac{3a^2b^7}{a}\right)^5$

$243a^5b^{35}$

⑨ $\left(\frac{5a^{13}b^5c^2}{3 \cdot 5^2}\right)^0$

1

⑩ $(a^3 \cdot a^{-2})^4$

a^4