

Algebra 3 Assignment # 3

Exponents

Simplify each of the following please. Express answers without negative exponents.

(1) $(5x)(-2x^2y)^3$

(2) $(3x^2yz^2)^3(-2x^3z^2)^2$

(3) $\frac{(-2x^2y)^3}{(6xy^2)^2}$

(4) $\frac{x^4y^{-4}z^6}{x^{-7}y^3z^2}$

(5) $\frac{x^0}{3y^0 + 6}$

(6) $x^t \cdot x^{t+1}$

(7) $\frac{8^n}{8^n - 1}$

(8) $(y^{2x}z^x)^x$

(9) $(c^{x+2}y^3)^x$

(10) $\left(\frac{1}{x^{-1}}\right)^{-1} \cdot \left(\frac{3}{8}\right)^{-2}$

(11) $(3x)^3(2x^2) - (2x^3)(5x)^2$

(12) $(y^n)(y^n) - (x^m)(x^m)$

(13) $\left(\frac{-1}{3x^{-1}}\right)^{-2}$

(14) $\frac{4^{-2}x^{-3}y^4}{2^{-4}x^3y^{-4}}$

(15) $(2x)^2(-3x) - \frac{8(x^3+y^3)^5}{8(x^3+y^3)^4} + y(-5y)^2$

(16) $\frac{(x^3y^{-4})^3(2x^4y^5)}{9x^{10}y^{12}}$

(17) $2^{x+1} + 2^{x+1}$

(18) $2^x + 2^x + 2^x + 2^x$

(19) $3^x + 3^{x+1} + 3^x + 3^{x+1} + 3^x$

(20) $2x^{-3}y^2(3x^4y + 2^3x^ny^{-1})$

Solve for x please.

(1) $2^{-3} \cdot 2^x = 2^6$

(2) $2^x \cdot 2^{x-1} = 2^7$

Algebra 3 Assignment # 3

Answers

(1) $-40x^7y^3$

(2) $108x^{12}y^3z^{10}$

(3) $-\frac{2x^4}{9y}$

(4) $\frac{x^{11}z^4}{y^7}$

(5) $\frac{1}{9}$

(6) x^{2t+1}

(7) 8

(8) $y^{2x^2}z^{x^2}$

(9) $c^{x^2+2x}y^{3x}$

(10) $\frac{64}{9x}$

(11) $4x^5$

(12) $y^{2n} - x^{2m}$

(13) $\frac{9}{x^2}$

(14) $\frac{y^8}{x^6}$

(15) $-13x^3 + 24y^3$

(16) $\frac{2x^3}{9y^{19}}$

(17) 2^{x+2}

(18) 2^{x+2}

(19) 3^{x+2}

(20) $6xy^3 + 16x^{n-3}y$

(1) $x = 9$

(2) $x = 4$