Exponent Laws (1)

Date:

1. Express as a single power.

a) $a^2 \cdot a^3 =$ b) $y^5 \cdot y^3 =$ c) $m^3 \cdot m^4 =$ d) $s^3 \cdot s^3 =$

e) $t^2 \cdot t^3 =$ f) $r^2 \cdot r^{12} =$ g) $x^2 \cdot x^4 =$ h) $a^3 \cdot a^2 =$

i) $b^5 \cdot b^7 =$ j) $7^2 \cdot 7^7 =$ k) $3^3 \cdot 3^{14} =$ l) $y^4 \cdot y^6 =$

2. Express as a single power.

a) $x^7 \div x^3 =$ b) $5^{13} \div 5^5 =$ c) $7^{14} \div 7^8 =$ d) $m^7 \div m =$

e) $m^3 \div m^2 =$ f) $a^5 \div a^4 =$ g) $15^7 \div 15^2 =$ h) $3^7 \div 3^4 =$

i) $4^3 \div 4 =$ j) $x^3 \div x^2 =$ k) $y^4 \div y^2 =$ l) $c^{15} \div c^6 =$

m) $4^6 \div 4^5 =$ n) $t^3 \div t =$ o) $f^3 \div f^2 =$ p) $m^{12} \div m^3 =$

3. Simplify.

a) $3y^2 \cdot 2y^3 =$ b) $4x^3 \cdot 3x^2 =$ c) $5a^5 \cdot 3a^2 =$ d) $7t^3 \cdot 3t^7 =$

e) $12c^5 \cdot 4c^7 =$ f) $-3m^3 \cdot 2m^2 =$ g) $6m^5 \cdot 3m^7 =$ h) $-4r^{14} \cdot 2r^8 =$

i) $8c^3 \cdot 3c^8 =$ j) $3p^3 \cdot 4p^4 =$ k) $3x^2y \cdot 4x^3y^2 =$ l) $2x^3 \cdot 3x^5 =$

4. Simplify.

a) $\dfrac{18t^9}{9t^3} =$ b) $\dfrac{4r^5s^7}{2r^2s^3} =$ c) $\dfrac{27m^3n^5}{9m^2n^2} =$

d) $\dfrac{-15x^3}{3x^2} =$ e) $2r^9 \div 2r^7 =$ f) $12a^{12} \div 4a^3 =$

g) $50y^4 \div 10y^2 =$ h) $22m^9 \div 11m^8 =$ i) $49s^7 \div \left(-7s^6\right) =$

j) $25c^{14} \div 5c^9 =$ k) $36x^7y^3 \div 6x^2y =$ l) $14r^7 \div 7r^5 =$

m) $-6t^5 \div 3t^3 =$ n) $4p^{30} \div 2p^{15} =$ o) $30m^7 \div 15m =$

Answers:

1. $a^5, y^8, m^7, s^6, t^5, r^{14}, x^6, a^5, b^{12}, 7^9, 3^{17}, y^{10}$
2. $x^4, 5^8, 7^6, m^6, m, a, 15^5, 3^3, 4^2, x, y^2, c^9, 4, t^2, f, m^9$
3. $6y^5, 12x^5, 15a^7, 21t^{10}, 48c^{12}, -6m^5, 18m^{12}, -8r^{22}, 24c^{11}, 12p^7, 12x^5y^3, 6x^8$
4. $2t^6, 2r^3s^4, 3mn^3, -5x, r^2, 3a^9, 5y^2, 2m, -7s, 5c^5, 6x^5y^2, 2r^2, -2t^2, 2p^{15}, 2m^6$