Simplifying a Power of a Power

Bronze

Write each of the following as a single power of 2.

a. $(2^3)^2$

b. $(2^4)^3$

c. $(2^6)^5$

d. $(2^{10})^2$

e. $(2^2)^4$

f. $(2^{10})^8$

g. $(2^5)^7$

h. $(2^2)^{11}$

i. $(2^{12})^3$

j. $(2^7)^4$

Silver

Write each of the following as a single power of x.

a. $(x^3)^2$

d. $(x^{10})^{12}$

g. $(x^7)^8$

b. $(x^5)^8$

e. $(x^7)^6$

h. $(x^2)^{13}$

c. $(x^2)^5$

f. $(x^4)^{11}$

Gold

Simplify each of the following.

a. $(6x^2)^2$

b. $(3y^3)^3$

c. $(4m^2)^2$

d. $(5z^2)^2$

e. $(2c^2)^5$

f. $(7a^4)^2$

g. $(2m^3)^4$

h. $(7x^2)^3$

i. $(5d^3)^3$

j. $(2v^4)^6$

Challenge

Simplify $(\frac{1}{2}x^2)^2$