Power of a Power property

$$(a^m)^n = a^{mn}$$

To raise a power to a power, multiply the exponents. If there is a coefficient, don't forget to take that to the power.

Examples

1. $\left(x^2y^4\right)^3 = x^{2\cdot3}y^{4\cdot3} = x^6y^{12}$
2. $\left(3w^5\right)^2 = 3^2w^{5\cdot2} = 9w^{10}$
3. $\left(-2a^3b^6\right)^3 = (-2)^3a^{3\cdot3}b^{6\cdot3} = -8a^9b^{18}$

Try These

1. $(-x^5)^2$ 1. _____
2. $(-x^2)^5$ 2. _____
3. $(mn^2)^4$ 3. _____
4. $(x^2y^3)^5$ 4. _____
5. $(3c^4)^2$ 5. _____
6. $(-2a^3)^2$ 6. _____
7. $\left(5a^4b^2\right)^3$ 7. _____
8. $\left(-4y^5z\right)^3$ 8. _____
9. $\left(2d^4e^5\right)^5$ 9. _____
10. $\left(-3pqr^2\right)^4$ 10. _____