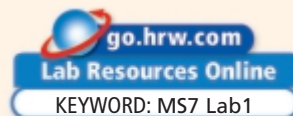


Use with Lesson 1-5

Explore Order of Operations



REMEMBER

The order of operations

1. Perform operations within grouping symbols.
2. Evaluate powers.
3. Multiply and divide in order from left to right.
4. Add and subtract in order from left to right.

Many calculators have an x^2 key that allows you to find the square of a number. On calculators that do not have this key, or to use exponents other than 2, you can use the caret key, \wedge .

For example, to evaluate 3^5 , press 3 \wedge 5, and then press **ENTER**.

Activity

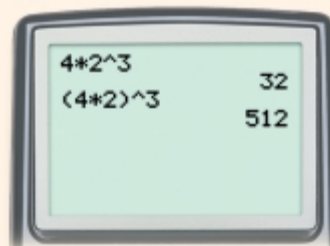
- 1 Simplify $4 \cdot 2^3$ using paper and pencil. Then check your answer with a calculator.

First simplify the expression using paper and pencil:

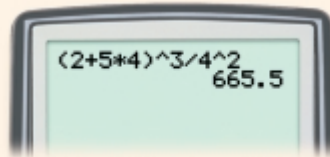
$$4 \cdot 2^3 = 4 \cdot 8 = 32.$$

Then simplify $4 \cdot 2^3$ using your calculator.

Notice that the calculator automatically evaluates the power first. If you want to perform the multiplication first, you must put that operation inside parentheses.



- 2 Use a calculator to simplify $\frac{(2 + 5 \cdot 4)^3}{4^2}$.



Think and Discuss

1. Is $2 + 5 \cdot 4^3 + 4^2$ equivalent to $(2 + 5 \cdot 4^3) + 4^2$? Explain.

Try This

Simplify each expression with pencil and paper. Check your answers with a calculator.

1. $3 \cdot 2^3 + 5$
2. $3 \cdot (2^3 + 5)$
3. $(3 \cdot 2)^2$
4. $3 \cdot 2^2$
5. $2^{(3 \cdot 2)}$

Use a calculator to simplify each expression. Round your answers to the nearest hundredth.

6. $(2.1 + 5.6 \cdot 4^3) \div 6^4$
7. $[(2.1 + 5.6) \cdot 4^3] \div 6^4$
8. $[(8.6 - 1.5) \div 2^3] \div 5^2$