

# Evaluating Expressions

Brackets and parentheses are both used to show groupings. Brackets are used to avoid double parentheses:  $[($  instead of  $(($ .

Evaluate expressions according to the order of operations.

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| 1. Evaluate inside parentheses, then evaluate inside brackets. | $2.3^2 + [(9 \times 0.4) + (3 \times 0.8)] \times 1.2$<br>$2.3^2 + [3.6 + 2.4] \times 1.2$<br>$2.3^2 + 6 \times 1.2$ |
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| 2. Evaluate exponents.   | $2.3^2 + 6 \times 1.2$<br>$5.29 + 6 \times 1.2$  |
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| 3. Multiply and divide from left to right.                     | $5.29 + 6 \times 1.2$<br>$5.29 + 7.2$  |
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| 4. Add and subtract from left to right.                        | $5.29 + 7.2$<br>$12.49$  |

Evaluate each expression.

1.  $(7.8 \div 2) \times 12$

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2.  $5.6 + (3 \times 9.6 - 4.8)$

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3.  $[(4.2 \times 3.4) - 9.28]$

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4.  $[4 \times (9.6 \div 3)] + 8.4$

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5.  $5 \times [(6 \times 2.3) + 0.9]$

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6.  $2^4 \div [(3.2 \times 0.8) + 1.44]$

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7.  $5.6 + [(3.1 \times 4) - 7.3] + 5^2$

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8.  $4^2 - 9 \div [(0.24 \times 7) + (0.66 \times 2)]$

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9. **Reasoning** Is it possible to have an expression that uses brackets without using any parentheses? Give your reasons.

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10. **Estimation** How could you estimate to get an approximate answer for this expression:  $12.3 \times [(2 \times 1.7) + 6] - 2^3$ ?

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