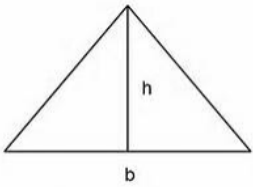# Evaluate and Simplify Expressions

Evaluating:

Evaluate for $x = 3$ and $y = -2$

1. $(x + 4) - 3(y + 1)$
2. $(4x - 7)^2 + 3y$
3. $5x \div -3y + 1$
4. The area formula for a triangle is $A = \frac{1}{2}bh$, where b is the lengt of the base and h is the length of the height.

   a. If the base is doubled, what happens to the area of the triangle?

   b. If the height is doubled, what happens to the area of the triangle

   c. If both the base and height are doubled, what happens to the area of the triangle?

Simplifying:

1. Which expression is equivalent to $3n^2 - 5n$?
   a. $3(n^2 - 5)$
   b. $n(3n - 5)$
   c. $n(3n - 5n)$
   d. $-2n^2$

Create the simplest equivalent expression

2. $3r^3 - 2r^2 + 5r^2 - 4r^3$
3. $7(3 + x) + (5 - 4x)$
4. $6(y - 5) + 3(y + 4) + y$
5. $3a^2b + 3a(2a^2 + 2ab - 4) + 5a^2$

6. Nate's architectural client said she wanted the width of every room in her house increased by 2 feet and the length decreased by 5 feet. The polynomial $2w^2 - w - 10$ gives the area of any room in the house with w representing the room's width. The width of the kitchen is 16 feet. What is the area of the kitchen?

7. The number of cells in a bacteria colony increases according to the expression $t^2 - 4t - 4$ with t representing the time in seconds that the colony is allowed to grow at 20°C and $t^2 - 3t - 4$ when the colony grows at 30°C.
   a. After 1 minute, which will be greater in number, a colony at 20°C or 30°C? Explain.
   b. After 10 minutes, how will the colonies compare in size? Explain.