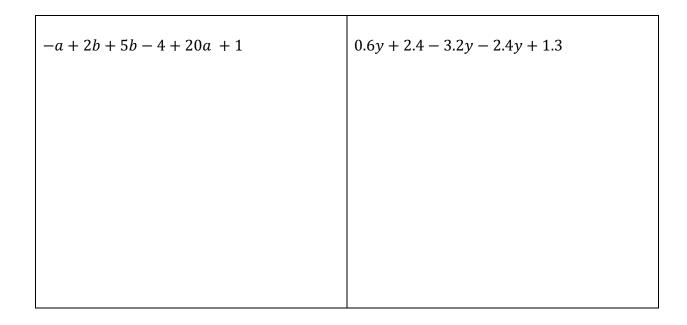# Simplifying Polynomials
4.2

- To simplify a polynomial is to **collect like terms.**
- To collect like terms is the same as to <u>combine like terms.</u>

Task 1: In each row, circle terms that are like.

$-x^2$	$-5x$	$0.89x^2$	$-x^3$	-10^2	y^2	$9x^2$
6	-0.67	$\dfrac{3^2}{5}$	$-ab$	-10^x	$6y^2$	$-6x^2$
ab	$-3a$	$7ab^2$	$-ab$	$-25ba$	$8abc$	$9ac^2$
$-x^2yz^5$	$6x^2z^5y$	$0.5yx^2$	$-x^2$	$10x^2yz^5$	y^2z^5x	$9zy^5x^2$

Task 2: Simplify by collecting like terms.

$2x + 24 - 13x - 10$	$-2x^3 + 24x - 3x + 10x^3 + 8$

$-a + 2b + 5b - 4 + 20a + 1$	$0.6y + 2.4 - 3.2y - 2.4y + 1.3$

Evaluating Polynomials

- To evaluate a polynomial means to substitute a given value for the variable and carry out the operations following BEDMAS rules.
- **Collect like terms before substituting!**

Examples: Evaluate the given polynomial if $x = 3$ and $y = 4$

a) $2x^2 - y + 3x + y^2 + 5x^2 + 5x - y$

b) $-x^2 - 3y - 4x + 5x^2 - 8x^2 + 5y - y$

c) $21 - 5y + 3y^2 + 6 + 5y^2 + 5 - 3y$