

1.6: Simplifying Expressions

Note Title

1/19/2016

(This should be mostly a review section)

Algebraic expressions being added are called terms.

Algebraic expressions being multiplied are called factors.

Like terms have the same variables and the same exponents.

Coefficient: numerical factor of a term.

Like terms can be combined by adding the coefficients.

Ex: Simplify.

$$\begin{aligned} & -2y^3 + 5y^2 - 8y^3 + 6y^2 - 7y + 3 - y \\ & = \boxed{-10y^3 + 11y^2 - 8y + 3} \end{aligned}$$

Ex: Simplify.

$$3x^2 - 8x + 7$$

This expression cannot be simplified.
It has 3 terms, no like terms.

Recall:

equation: a mathematical statement with an equals sign.

expression: doesn't have an equals sign.

Equations get solved.
Expressions get simplified.



Ex. Simplify. $2(6-7x+5x^2) - 4(12-2x) + 3$

$$= \underline{12} - \underline{14x} + \underline{10x^2} - \underline{48} + \underline{8x} + \underline{3}$$

$$= \boxed{10x^2 - 6x - 33}$$

Ex. Simplify

$$\frac{3}{4}x^2 - \frac{2}{3}x + \frac{1}{5} - 1 - \frac{4}{3}x^2 + \frac{1}{4} - 7x$$

$$= \frac{3}{4}x^2 - \frac{4}{3}x^2 - \frac{2}{3}x - 7x + \frac{1}{5} - 1 + \frac{1}{4}$$

$$= \frac{3}{4}x^2 \left(\frac{3}{3}\right) - \frac{4}{3}x^2 \left(\frac{4}{4}\right) - \frac{2}{3}x \left(\frac{1}{1}\right) - \frac{7}{1}x \left(\frac{3}{3}\right) + \frac{1}{5} \left(\frac{4}{4}\right) - \frac{1}{1} \left(\frac{20}{20}\right) + \frac{1}{4} \left(\frac{5}{5}\right)$$

$$= \frac{9}{12}x^2 - \frac{16}{12}x^2 - \frac{2}{3}x - \frac{21}{3}x + \frac{4}{20} - \frac{20}{20} + \frac{5}{20}$$

$$= \boxed{-\frac{7}{12}x^2 - \frac{23}{3}x - \frac{11}{20}}$$

