

$$5x - 2y \leq 75$$



$$\begin{bmatrix} a & b \\ c & d \end{bmatrix}$$



$$S = Pe^{rt}$$



$$APY = \left(1 + \frac{r}{n}\right)^n - 1$$

Math 1090 ~ Business Algebra

Section 1.1 Linear Equations in One Variable

Objectives:

- Simplify linear expressions.
- Solve linear equations.
- Express a rational equation as a linear equation.
- Translate a word problem into a linear equation.

Vocabulary

equation

vs

expression

identity

equivalent equations

Solve equations and simplify expressions

Ex 1: Solve

a) $3x + 22 = 7x + 2$

b) $\frac{2}{3}x - 1 = \frac{x-2}{2}$

Ex 2: Simplify

a) $3(x-1) + 2x + 5 - 7$

b) $4 - (2x + 5) + 6 + 5(x-3)$

Vocabulary

rational equation

domain

Ex 3: Solve these rational equations by turning them into linear equations.

Note: Check the domain.

a) $\frac{2x}{x-3} = 4 + \frac{6}{x-3}$

b) $\frac{3}{x} + \frac{1}{4} = \frac{2}{3} + \frac{1}{x}$

Ex 4: Suppose a professor counts the final exam as being equal to each of the other tests in her course, and she will also change the lowest test score to match the final exam if that is higher. If a student's four test scores are 83, 67, 52 and 90, what is the lowest score the student can earn on the final exam and still obtain an 80 average for the course?

Ex 5: Three less than 4 times a number is 25. What is the number?

Ex 6: The perimeter of a rectangle is 700 ft and the length of the rectangle is four times as long as the width. Find the dimensions of the rectangle.