Algebra 2

Ch. 3 Handout 3.2 Solving systems Algebraically

Not every system can be solved easily bygraphing. Although you can graph eachline easily, the exact point of intersection is not obvious.

Substitution and **Elimination method** allows you to find exact solution

4)
$$3x + y = -9$$

$$+ -3x - 2y = 12$$

$$- y = 3$$

$$y = -3$$

$$3x + y = -9$$

$$3x + 5y = 6$$

$$6x - 10y = 0$$

$$-6x + 10y = 12$$

$$+6x - 10y = 0$$

$$0 \neq 12$$

$$No Solution$$

$$6x - 10y = -12$$

$$-6x + 10y = 12$$

+ $6x - 10y = -12$

Infinitely Many Solutions

7)
$$2x = -4y - 4$$
 $3(4) + 5(-3) = -3$

$$3x + 5y = -3$$

$$-2(3x + 5y = -3)$$

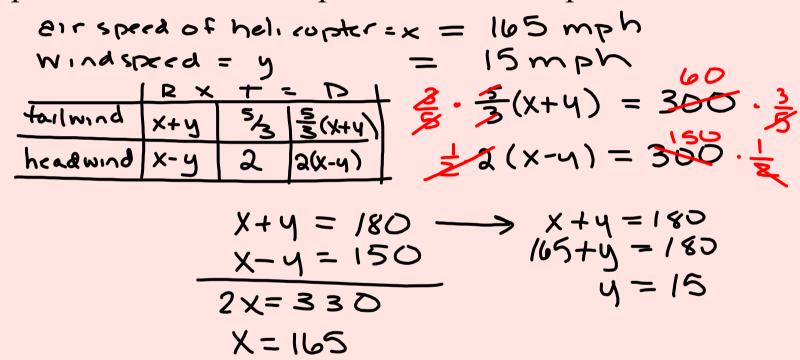
$$-(3x + 5y = -3)$$

$$+(-6x - 10y = 6)$$

$$2y = -3$$

$$3x + 5(-3) = -3$$

8. With a tail wind, a helicopter traveled 300 miles in 1 hour and 40 minutes. The return trip against the same wind took 20 minutes longer. Find the wind speed and also the air speed of the helicopter.



Equivalent systems: are systems that have the same solutions.

Review -- Elimination Method

- 1. Rewrite system to align like terms
- 2. Eliminate one of the variables
- 3. Solve for other variable
- 4. Plug it back in to the original equation

Assignment:

Pgs 128-129 18-40 evens, 44-52 evens