From Yesterday:

2. You want to rent a car for one day and have narrowed it down to two companies: Rent-a-Lemon and Drive-a-Wreck.

Rent-a-Lemon charges you $45 a day plus $0.25 per mile.

Drive-a-Wreck charges you $60 a day plus $0.17 per mile.

a. Write an equation for each company. Use the following variables:

C =total charge m =# miles driven

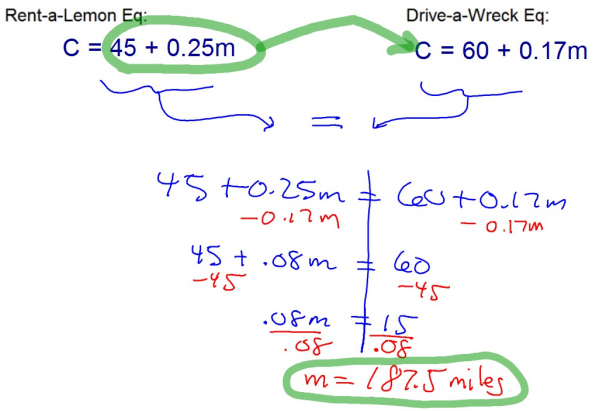
Rent-a-Lemon Eq:

C = 45 + 0.25m

Drive-a-Wreck Eq:

C = 60 + 0.17m

b. Set the two equations equal to each other and solve for m.



c. What does this value of m represents?

m = 187.5 mi

If you drive 187.5 miles the two companies will charge the same amount.

d. For what amount of miles should you choose Drive-a-wreck?

If you drive more than 187.5 mi

#mi	Rent-a-Lemon	Drive-a-wreck
100	70	77
187.5	91.88	91.88
200	95	94

e. When would you choose Rent-a-Lemon?

When you drive less than 187.5 miles

# mi	Rent-a-Lemon	Drive-a-wreck
100	75	77
187.5	93.88	93.88
200	95	94

Solving 2-Step Equations:

The "usual" process:

Summary	Solving Two-Step Equations
Step 1	Use the Addition or Subtraction Property of Equality to get the term with a variable alone on one side of the equation.
Step 2	Use the Multiplication or Division Property of Equality to write an equivalent equation in which the variable has a coefficient of 1.

Solve

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$1 + \frac{4}{3}a = 25$

$-1 \quad -1$

$\frac{4}{3}a = 24 \cdot \frac{3}{4}$

$\frac{\frac{4}{3}}{\frac{4}{3}}a = \frac{72}{4}$ $a = 18$

OR

$3\left(1 + \frac{4}{3}a\right) = 25 \cdot 3$

$3 + 4a = 75$

$-3 \quad -3$

$\frac{4a}{4} = \frac{72}{4}$

$a = 18$

What is the error in the work?

$12 - 3y = 15$

$3y = 3$

$y = 1$

The left out the negative sign on the 3y

$12 - 3y = 15$

$-12 \quad -12$

$\frac{-3y}{-3} = \frac{3}{-3}$

$y = -1$

What is the error in the work?

$$\frac{m}{3} - 9 = -21$$
$$\frac{m}{3} - 9 + 9 = -21 + 9$$
$$\frac{m}{3} = -12$$
$$m = -4$$

They should have multiplied by 3 NOT ÷ by 3

$3 \cdot \frac{m}{3} = -12 \cdot 3$

$m = -36$

Solve. $7m + 8 - 2m + 13 = 75$

$5m + 21 = 75$

$-21 \quad -21$

$\frac{5m}{5} = \frac{54}{5}$

$54 \div 5 = 10.8$

What is a good name for this kind of equation? Multi-Step Equation

$7m + 8 - 2m + 13 = 75$

Sec 2-3: Solving Multi-Step Equations

Sec 2-3: Solving Multi-Step Equations

- Eliminate parentheses from the problem
  - Distributive Property
  - Division
- Combine like terms that are on the same side of the = sign
- Solve for the variable

Solve.

$$6 - 2(Q + 8) - 9 + 5Q = 31$$

$6 - 2Q - 16 - 9 + 5Q = 31$

$3Q - 19 = 31$

$+19 \quad +19$

$\frac{3Q}{3} = \frac{50}{3}$

$Q = \frac{50}{3}$