Section 2.1: cont'd

Wednesday, October 02, 2013
9:39 AM

types of equations (in one variable):

- identity: an equation that is satisfied by <u>every</u> number
  (for which both sides of the equation are defined)

  → solution set is $\mathbb{R}$

- conditional: an equation that is satisfied by at least one number but is not an identity

  → solution set looks like $\{8\}$ or $\{-1, 3\}$

- inconsistent: an equation that cannot be satisfied by any number

  → solution set is $\emptyset$

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solve the following equations and state what type of equation (inconsistent, conditional, or identity) it is

$$6 \times \left[\frac{x-1}{2} - \frac{3x-4}{6} \right] = \left[\frac{1}{3} \right] \times 6$$

$$\left\lfloor \frac{x-1}{2} - \frac{3x-4}{6} \right\rfloor = \left\lfloor \frac{1}{3} \right\rfloor^{+6}$$

$$3(x-1) - (3x-4) = 2$$

$$3x - 3 - 3x + 4 = 2$$

$$1 = 2$$

$\emptyset$

inconsistent

$$2(0.25x + 1) - 2 = 0.75x - 1.75$$

$$0.5x + 2 - 2 = 0.75x - 1.75$$

$$^{4}(1.75) = (0.25x)^{4}$$

$$7 = x$$

or $x = 7$

$\{7\}$

conditional