

Curriculum Outcomes:

PR1: . Generalize a pattern arising from a problem-solving context using linear equations and verify by substitution.

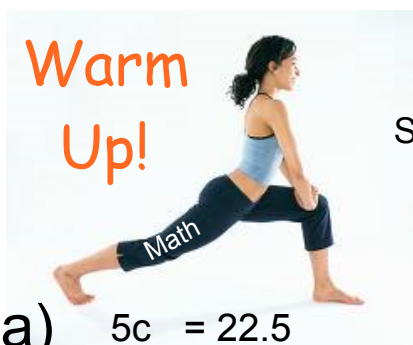
PR3. Model and solve problems using linear equations of the form:

$$ax = b; = b, a \neq 0; ax + b = c; +b = c, a \neq 0; = b, x \neq 0$$

$ax + b = cx + d; a(bx + c) = d(ex + f); a(x + b) = c; ax = b + cx$ concretely, pictorially and symbolically, where $a, b, c, d, e,$ and f are rational numbers

Student Friendly:

“Rearranging an equation with variables on both side of the equal sign”



Solve for x using inverse operations

a) $\frac{5c}{2} = 22.5$

b) $\frac{x}{4} + 3 = \frac{5}{6}$

c) $5x + 4 = 29$

d) $3(2x-1) = -5$

e) $5 - 3x = 7$

f) $2 - \frac{x}{4} = 3$



Solve for x using inverse operations

$4x1 = 4$ $6x1 = 6$
 $4x2 = 8$ $6x2 = 12$
 $4x3 = 12$

a) $\frac{5c}{2} = 22.5$

$\frac{5c}{5} = \frac{45}{5}$

$c = 9$

b) $\frac{x}{4} + 3 = \frac{5}{6}$

$\frac{12x + 36}{4} = \frac{10}{6}$

$3x + 36 = 10 - 36$

$3x = -26$

$x = -\frac{26}{3}$

c) $5x + 4 = 29$

-4 -4

$$\frac{5x}{5} = \frac{25}{5}$$
$$x = 5$$

d) $3(2x-1) = -5$

$$6x - 3 = -5$$
$$+3 \quad +3$$
$$\frac{6x}{6} = \frac{-2}{6}$$
$$x = \frac{-2}{6}$$
$$x = \frac{-1}{3}$$

$$e) 5 - 3x = 7$$

$$\frac{-3x}{-3} = \frac{2}{-3}$$

$$x = -\frac{2}{3}$$

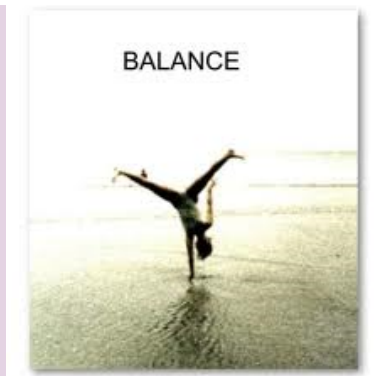
$$f) 2 - \frac{x}{4} = 3$$

$$8 - x = 12 - 8$$

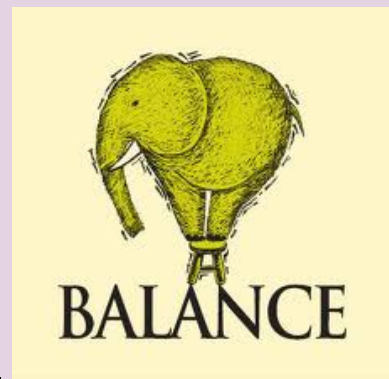
$$\frac{-x}{-1} = \frac{4}{-1}$$

$$x = -4$$

$$\begin{array}{l} \overset{-2}{f) 2} \cdot \overset{-2}{\left(\frac{-x}{4} \right)} = 3 \cdot \overset{-2}{-2} \\ \cancel{(4)} \cdot \left(\frac{-x}{4} \right) = 3 \cdot \cancel{(4)} \\ \frac{-x}{4} = 1 \\ \frac{-x}{4} = 1 \\ \frac{-x}{-1} = \frac{4}{-1} \\ x = -4 \end{array}$$



Section 6.2





Solving Equations...

Your mission
is to keep
everything
in balance!!

What ever you do to one side...
you must do to the other!!

Solve for x...

$$\begin{array}{r} -4x \\ \textcircled{6x} + 2 = 10 + \textcircled{4x} \\ -2 \quad -2 \end{array}$$
$$6x - 4x = 10 - 2$$
$$\frac{2x}{2} = \frac{8}{2}$$
$$x = 4$$

The only difference from last section is that numbers and letters appear on both sides and you have to bring all letters to one side and all numbers to the other side.



Move variables
to one side
and
constants
to the other!

$$\boxed{-3c} + 7 = \boxed{2c} - 8$$

(Note: A red line is drawn through the $-3c$ term, and a red $+3c$ is written above it. Similarly, a red $+3c$ is written above the $2c$ term.)

$$7 + 8 = \boxed{5c} - \cancel{8} + \cancel{8}$$

$$\frac{15}{5} = \frac{\cancel{5c}}{\cancel{5}}$$

$$c = 3$$

$$\boxed{5a} - 8 = 16 - \boxed{3a}$$

(Note: Green annotations show +3a above 5a and +3a above -3a, with a line connecting them.)

$$\boxed{8a} - \cancel{8} = 16 + \cancel{8}$$

(Note: Purple annotations show a box around 8a and a purple line through the 8 on both sides.)

$$\frac{\cancel{8}a}{\cancel{8}} = \frac{24}{8}$$

(Note: Red annotations show 8a = 24, with purple lines under the 8s.)

$$\boxed{a = 3}$$

(Note: Purple box around the final answer.)

$$\geq \leq > <$$

$$\frac{2a^{(15)}}{3} = \frac{4a^{(15)}}{5} + 7^{(15)}$$

multiply by the lowest
common multiple

$$\frac{30a}{3} = \frac{60a}{5} + 105$$

$$\boxed{10a} = \boxed{12a} + 105$$

$$0 = \boxed{2a} + 105$$

$$\frac{-105}{2} = \frac{2a}{2}$$

$$\boxed{a = -52.5}$$



$$\frac{122}{r} = 3$$

(Handwritten red annotations: a red 'r' is crossed out under the denominator, and a red 'r' is written above the number 3. To the right, there is a large scribble and the text 'Auto service announcement.')

$$\frac{122}{3} = \frac{3r}{3}$$

$$r = \frac{122}{3} \quad \text{or} \quad 40 \frac{2}{3}$$

Class/Homework



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Show all work. Don't worry about identifying which strategy you used.

6 ← Don't use algebra tiles
8
#10

Class/Homework

Page 281 - 283

Show all work. Don't worry about identifying which strategy you used.

6

Do not use algebra tiles