

Lesson 20: Adding Like Terms and Two-Step Solving Questions

e.x. Solve "find the value of x that makes a true statement"

+ - x ÷

$$120 = 1x - 0.8x$$

$$\frac{120}{0.2} = \frac{0.2x}{0.2}$$

$$600 = x$$

Recall: to solve, isolate x by performing opposite operation

nota bene: Before isolating, add like terms.

e.x. $2y + 3y = 5y$

e.x. $1y + 1y = 2y$

e.x. $3y - 1y = 2y$

e.x. $1y + 5y = 6y$

e.x. $1y + 0.5y = 1.5y$

e.x. $1y - 0.8y = 0.2y$

$$r \cdot y + s \cdot y = (r+s)y$$

$$r x - s x = (r-s)x$$

$$1x - 0.8x = (1-0.8)x$$

$x, y \rightarrow$ unknowns/variables
 $r, s \rightarrow$ coefficients (numbers)

Solve

$$180 = 1x + 0.2x$$

$$180 = (1 + 0.2)x$$

$$\frac{180}{1.2} = \frac{1.2x}{1.2}$$

$$\$ 150 = x$$

step i. add like term

$$rx \pm sx = (r \pm s)x$$

step ii. Solve for x by performing opposite operations to both sides.

Solve

$$1y - 3y = 8$$

$$\frac{-2y}{-2} = \frac{8}{-2}$$

$$y = -4$$

Part A of handout 1
Lesson 20

1x2

2-step Solving :

Solve :

a number coefficient variable a number

15 + 5x = 25

~~15~~ + 5x = ~~25~~ - 15

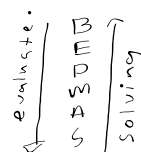
~~5x~~ = ~~10~~ / 5

x = 2

nota bene: you cannot add numbers with coefficients.

step i. Solve for x by performing opposite operations to both sides.

step ii. To know which operation to do 1st, follow BEDMAS in reverse



Solve

$$-4 \overset{+10}{=} -10 \overset{+10}{+} 3x$$

$$\frac{6}{3} = \frac{\cancel{3} \cdot x}{\cancel{3}}$$

$$2 = x$$

Do part B
of handout 1
in Lesson 20
(check answers)

Solve
o.o.

Part B
✓
✓
✓
✓

Discount Word Question → handout 2
in L20
question 2 is
Bonus.

Similar to question 3:

The price of a winter coat after discount was \$835. If the discount was 25% (off) (-25%), what was the original sales price?

sub values into equation.

$$835 = 1x - 0.25x$$

$$835 = (1 - 0.25)x$$

$$\frac{835}{0.75} = \frac{0.75x}{0.75}$$

$$\$1113.33 = x$$

add like terms

solve for $\frac{x}{w}$ 0.0

Do handout 2.
in L20.

WANT: old (original) price/cost = x
TOOL: an equation
new cost = old cost \pm % \times old cost
% expressed as decimal (divide 100)
25% = 0.25
INFO: new cost \$835
% = 0.25