

## 2.0 Solving Linear Equations

one and two-step

$$5x - 7 = 18$$

$$\text{SKIP } 5x - 7 + 7 = 18 + 7$$

$$5x = 25$$

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

$$x = 5$$

$$\star 2(4x + 10) = 12x$$

$$\text{SKIP } \frac{2(4x+10)}{2} = \frac{12x}{2}$$

$$4x + 10 = 6x$$

$$\text{SKIP } 4x + 10 - 4x = 6x - 4x$$

$$10 = 2x$$

$$\text{SKIP } \frac{10}{2} = \frac{2x}{2}$$

$$5 = x$$

$$\star 7 = \frac{2x}{5} + 1$$

$$\text{SKIP } 7 - 1 = \frac{2x}{5} + 1 - 1$$

$$6 = \frac{2x}{5}$$

$$\text{SKIP } 6 \cdot 5 = \frac{2x}{5} \cdot 5$$

$$30 = 2x$$

$$\text{SKIP } \frac{30}{2} = \frac{2x}{2}$$

$$15 = x$$

SKIP as steps are shown as explanations, but not necessary to write down



Can you solve the  $\star$ 'ed questions using a different strategy?

$$2(4x + 10) = 12x$$

$$8x + 20 = 12x$$

$$20 = 4x$$

$$5 = x$$

$$7 = \frac{2x}{5} + 1$$

$$\text{SKIP } 5(7) = 5\left(\frac{2x}{5} + 1\right)$$

$$35 = 2x + 5$$

$$30 = 2x$$

$$15 = x$$

WHITE BOARD  
WORK

Ex. 1 Solve for "x" in each of the following. The sum of the answers in each set is provided **SUM** so you can tell if you are getting them right. Be sure to show your work.

SET 1 **102**

a)  $x - 13 = 43$

b)  $4x = 16$

c)  $15 - x = 6$

d)  $\frac{x}{3} = 11$

SET 2 **56**

a)  $3x + 5 = 2$

b)  $2x - 4 = 6$

★c)  $3(x + 2) = 12$

★d)  $-7 + \frac{x}{5} = 3$

SET 3 **15**

a)  $4x - 7 = 2x + 3$

b)  $10 - 5x = 3x - 6$

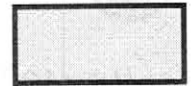
★c)  $6x = 2(x + 10)$

d)  $9x - 11 = 4(x + 1)$



Can you solve the ★'ed questions using a different strategy?

Ex. 2 Find the width of a rectangle if its perimeter is 42 m and its length is 12 m. Set up the equation and then solve.





Ex. 1 Solve for "x" in each of the following. The sum of the answers in each set is provided **SUM** so you can tell if you are getting them right. Be sure to show your work.

SET 1 **11**

a)  $\frac{z}{5} + \frac{z}{4} = \frac{9}{20}$

b)  $\frac{5t-3}{4} = \frac{t}{2}$

★ c)  $\frac{2b+3}{3} = \frac{2(5b-3)}{12}$

SET 2 **8**

a)  $\frac{3y-1}{5} - 1 = \frac{2y-4}{3}$

b)  $\frac{x-3}{4} + \frac{x}{8} = \frac{3}{4}$

★ c)  $\frac{x-2}{5} - \frac{x-4}{4} = \frac{x-3}{10}$



Can you solve the ★ed questions using a different strategy?

Ex. 2 If there is time complete the posted "Math Mistakes" handout.

working with fractions

$$\star \frac{2x+1}{3} = \frac{x+4}{2}$$

Multiply by 2 and by 3

$$3 \cdot 2 \left( \frac{2x+1}{3} \right) = 3 \cdot 2 \left( \frac{x+4}{2} \right)$$

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

$$6x+3 = 3x+12$$

$$3x = 9$$

$$x = 3$$

Can you solve the  $\star$ ed questions using a different strategy?

$$\star \frac{5x-2}{3} + 3 = \frac{3(2x+7)}{5}$$

Find common denominator

$$\frac{5x-2}{3} + \frac{9}{3} = \frac{3(2x+7)}{5}$$

$$\frac{5x+7}{3} = \frac{3(2x+7)}{5}$$

$$5(5x+7) = 3 \cdot 3(2x+7)$$

$$25x+35 = 9(2x+7)$$

$$25x+35 = 18x+63$$

$$7x = 28$$

$$x = 4$$