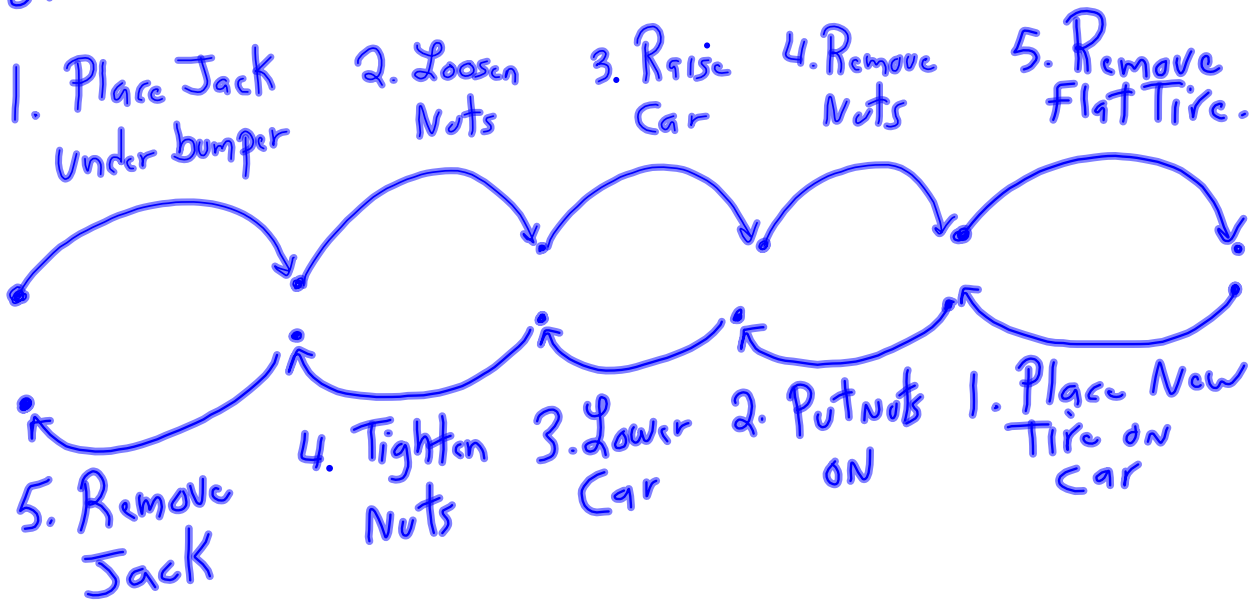
Chapter 6: Linear Equations & Inequalities

Section 6.1: Solving Equations by using Inverse Operations

Problem: Use opposites to complete an arrow diagram for changing a flat tire.

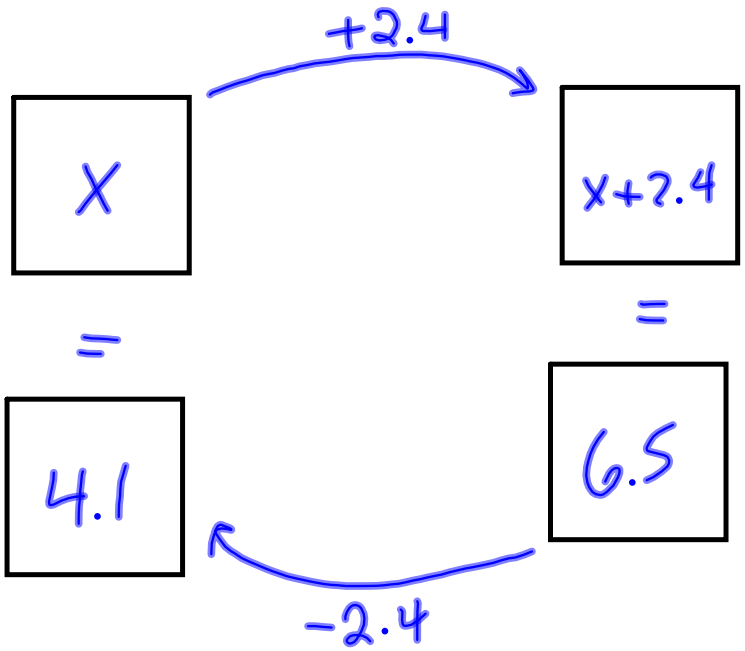
Solution:



*Note: Inverse operations "undo" or reverse each others result.

Ex#1: Solve $x+2.4=6.5$ using a model:

Ans)

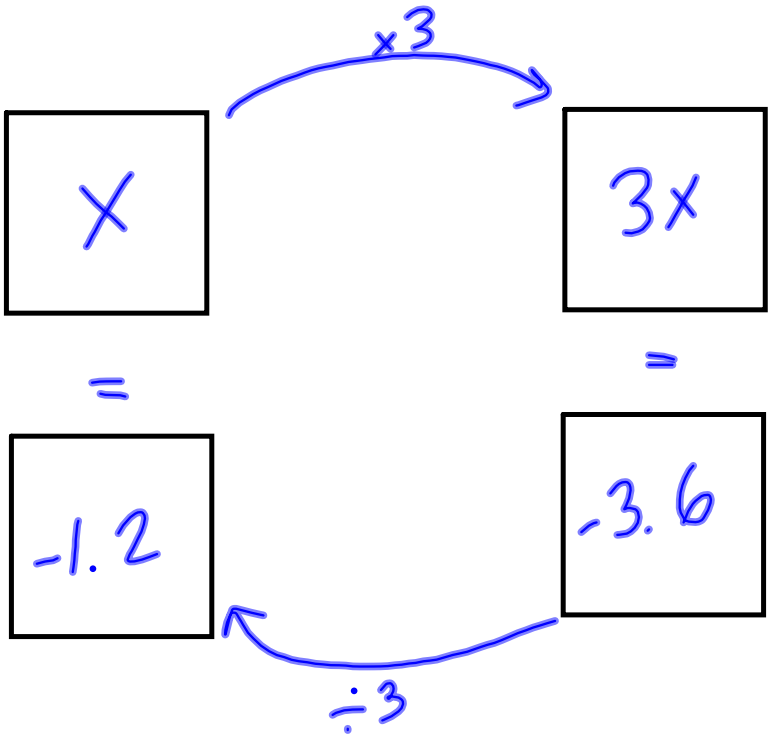


$\therefore x=4.1$

Ex #2 For each word problem, determine an equation and solve.

(a) Three times a number is -3.6.

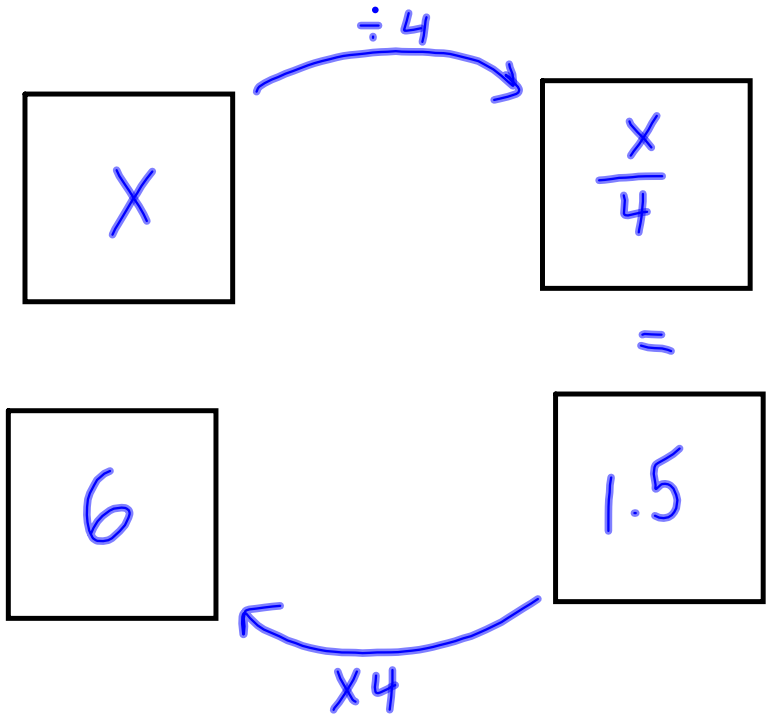
Ans) $3x = -3.6$



$x = -1.2$

(b) A number divided by 4 is 1.5

Ans) $\frac{x}{4} = 1.5$



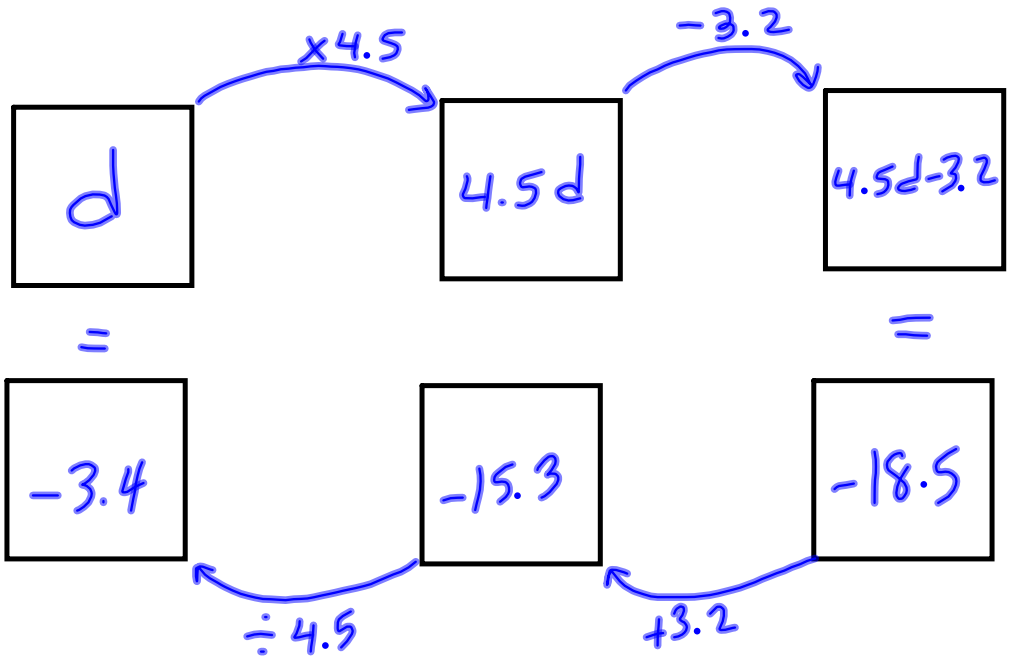
$x = 6$

Note: If you have more than one operation to calculate, the model is the same, just multiple boxes

Ex #3 Solve each equation:

(A) $4.5d - 3.2 = -18.5$

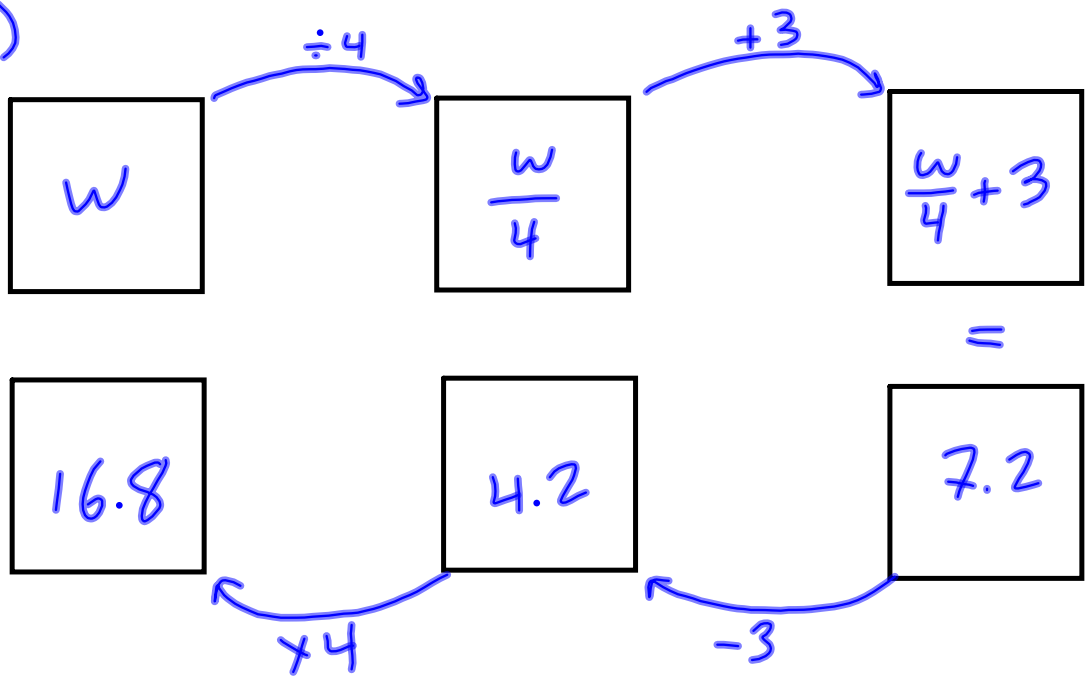
Ans)



$d = -3.4$

(B) $\frac{w}{4} + 3 = 7.2$

(Ans)



$\therefore w = 16.8$

Note: This model can also be used to help solve word problems.

Ex #4 A rectangle has a length of 3.7cm and perimeter of 13.2cm.

(a) Write an equation that can be used to determine the width of the rectangle.

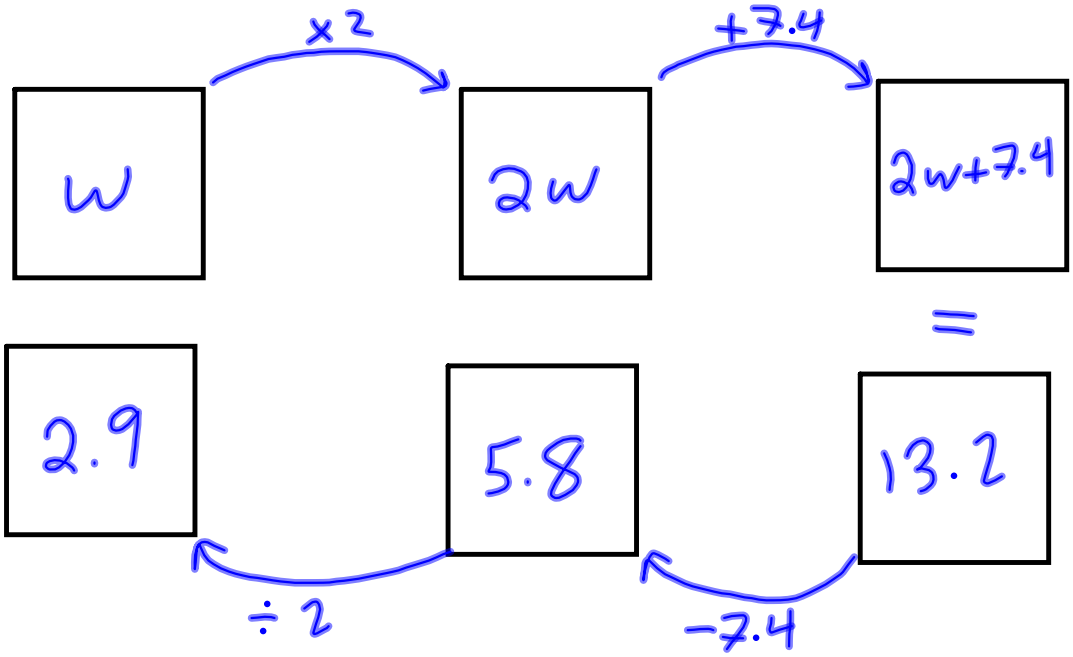
(b) Solve the equation.

Ans) (A) $P = 2l + 2w$

$13.2 = 2(3.7) + 2w$

$13.2 = 7.4 + 2w$

(B)



$w = 2.9\text{cm}$

Ex 5 Seven percent of a number is 56.7

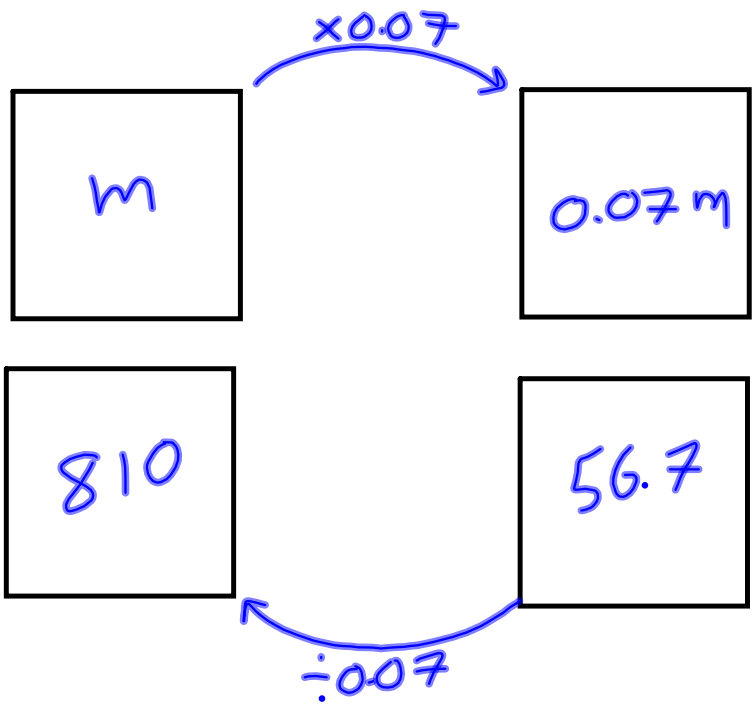
(a) Write an equation to determine the #

(b) Solve the equation

7% = 0.07

Ans) (a) $0.07m = 56.7$

(b)

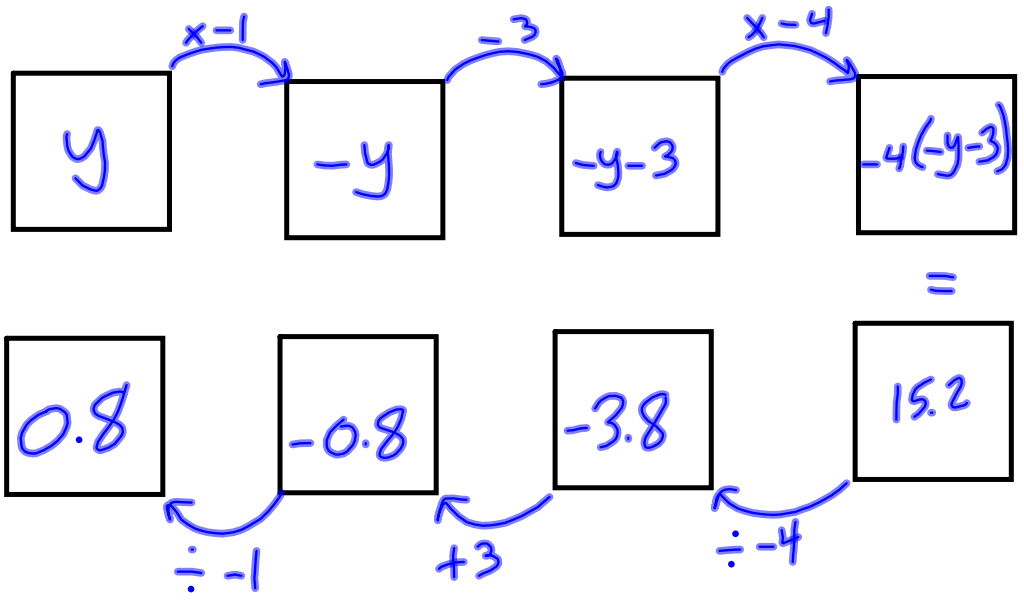


$\frac{0.07m}{0.07} = \frac{56.7}{0.07}$

$m = 810$

Ex #6 Solve: $15.2 = -4 \cdot (-y-3)$

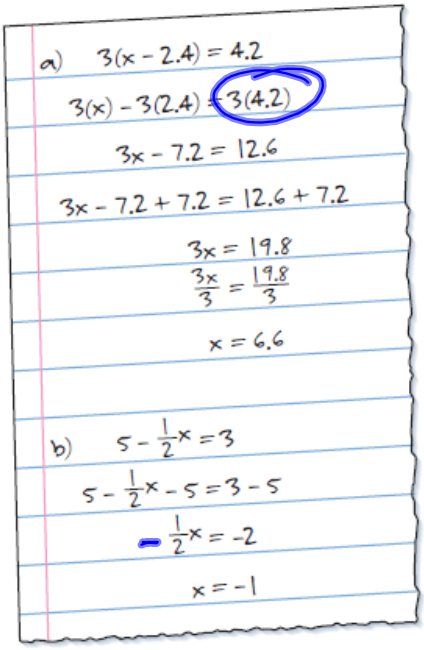
Ans)

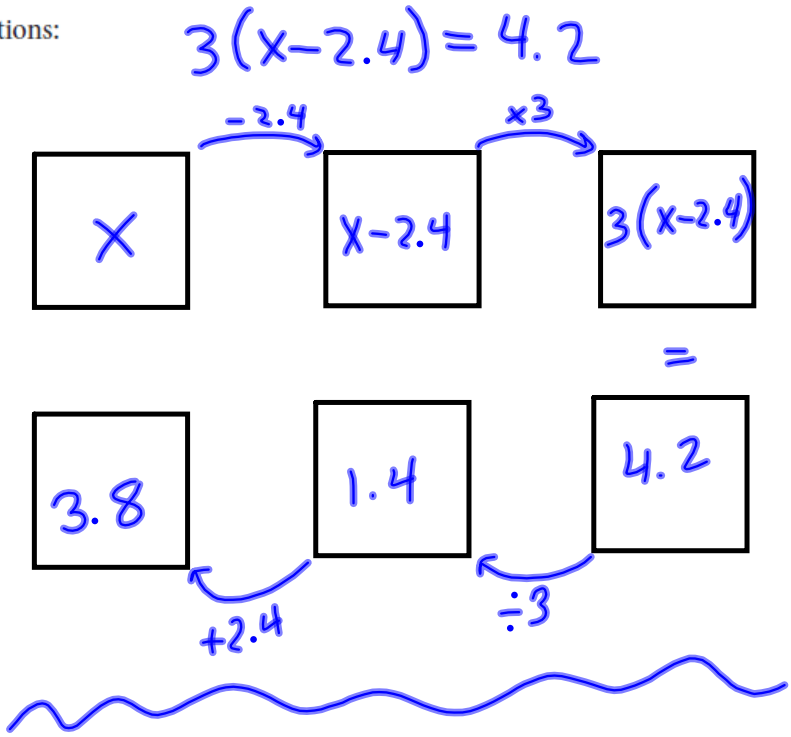


$\therefore y = 0.8$

p271-274
#5, 6, 10 A, C, E
13, 15, 20, 21

20. On a test, a student solved these equations:





What mistakes did the student make?
Write a correct solution for each equation.