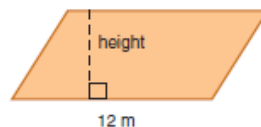


- 1) Make 11___ divisible by 3.
- 2) $\$339.50 \times 10$
- 3) 20% of 105
- 4) What is 89% written as a decimal?
- 5) What type of decimal is $12.\overline{54}$?
- 6) How many $\frac{1}{2}$ hours in 5 hours?
- 7) $(-7) - (-3) =$
- 8) Which is greater - $\frac{1}{5}$ or $\frac{1}{3}$?
- 9) What is the height? a) Area = 60 m^2



- 10) Write the expression:
3 more than 5 times a number

6.1 - Solving Equations

2. Write an equation for each sentence.

Solve each equation by inspection.

- a) Five more than a number is 22.
- b) Seven less than a number is 31.
- c) Six times a number is 54.
- d) A number divided by eight is 9.
- e) Nine more than three times a number is 24.

-
- 3.** Write an equation you can use to solve each problem. Solve each equation by systematic trial.
- a) Ned spent \$36 on a new shuttlecock racquet. He then had \$45 left. How much money did Ned have before he bought the racquet?
 - b) Laurie sold 13 books for \$208. All books had the same price. What was the price of each book?
 - c) Maurice sorts some dominoes. He divides them into 15 groups, with 17 dominoes in each group. How many dominoes does Maurice sort?

<http://www.hoodamath.com/mobile/games/algebrabalanceequations.html>



$$12 \text{ g} + 3 \text{ g} = 8 \text{ g} + 4 \text{ g} + 3 \text{ g}$$
$$15 \text{ g} = 15 \text{ g}$$

To verify means to check
the solution is correct.

Example

A hockey team gets 2 points for a win,
1 point for a tie, and 0 points for a loss.

The Midland Tornadoes ended the season
with 28 points. They tied 6 games.

How many games did they win?

Write an equation you can use to solve the problem.

Use a model to solve the equation, then verify the solution.



A Solution

Let w represent the number of games won by the Midland Tornadoes.

So, $2w$ represents the number of points earned from wins.

The team has 6 points from ties.

It has 28 points altogether.

So, the equation is: $2w + 6 = 28$

Use balance scales to model the equation.



we preserve balance and equality:

- We can *add* the same mass to each side.
- We can *subtract* the same mass from each side.
- We can *divide* each side into the same number of equal groups.

Later, we will show that:

- We can *multiply* each side by the same number by placing equal groups on each side that match the group already there.

Practice

1. Find the value of the unknown mass on each balance scales.
Sketch the steps you used.



2. a) Sketch balance scales to represent each equation.

b) Solve each equation. Verify the solution.

i) $x + 12 = 19$

ii) $x + 5 = 19$

iii) $4y = 12$

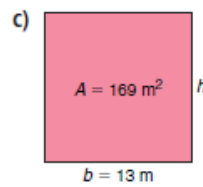
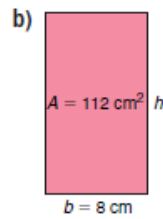
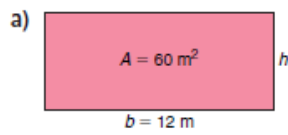
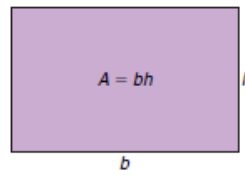
iv) $3m = 21$

v) $3k + 7 = 31$

vi) $2p + 12 = 54$

3. a) Write an equation for each sentence.
b) Solve each equation. Verify the solution.
- I) Five more than a number is 24.
 - II) Eight more than a number is 32.
 - III) Three times a number is 42.
 - IV) Five more than two times a number is 37.

4. The area of a rectangle is $A = bh$, where b is the base of the rectangle and h is its height. Use this formula for each rectangle below. Substitute for A and b to get an equation. Solve the equation for h to find the height. Show the steps you used to get the answers.



6. Take It Further

- a) Write a problem that can be solved using this equation: $x + 4 = 16$
- b) How would your problem change if the equation were $x - 4 = 16$?
- c) Solve the equations in parts a and b.
Show your steps.





