

Study Guide

Chapter 3 Test

3.1: Solve One-Step Equations

- Be able to use inverse operations to isolate the variable and solve one-step equations

Ex: $\frac{2}{7}n = -5$

$$n = -17\frac{1}{2}$$

Ex: $-5 + x = -4$

$$x = 1$$

Ex: $1 - x = -2$

$$x = 3$$

3.2/3.3: Solve 2/Multi-Step Equations

- Be able to use inverse operations and reverse PEMDAS to solve multi-step equations

Ex: $4w + 2w = 24$

$$w = 4$$

Ex: $\frac{x}{2} + 5 = 11$

$$x = 12$$

Ex: $5x - 4(x - 3) = 17$

$$x = 5$$

Ex: $\frac{3}{4}(z - 6) = 12$

$$z = 22$$

Ex: $-4 = 2(x - 2) - 3(1 - x)$

$$x = \frac{3}{5}$$

3.4: Solve equations with variables on both sides

- Be able to solve equations with variables on both sides by moving variable terms together

Ex: $3m - 25 - 8m = m - 14$

$$m = -\frac{11}{6}$$

Ex: $4(m - 3) = 2(6 - 2m)$

$$m = 3$$

- Be able to identify when an equation has no solution, infinite solutions or 0 as the solution

Ex: $-5(3a - 4) = 7a + 27 - 7$

$$a = 0$$

Ex: $4(3x + 2) = 2(6x + 4)$

$$\text{any number}$$

Ex: $5z - 6 = (z - 1)5$

No solution

3.5/3.6: Write ratios and write/solve proportions

- Be able to set up and solve ratios and proportions

Ex: $\frac{34}{6} = \frac{2z + 1}{2}$

$z = \frac{31}{6}$

Ex: $\frac{-4a - 1}{-10a} = \frac{3}{8}$

$a = -4$

3.7: Set up and solve percent problems

- Be able to set up and solve percent and percent of change problems using the percent proportion

Ex: What is 42.5% of 380?

161.5

Ex: 90 is what percent of 250?

36%

Ex: A survey asks high school seniors whether they would be willing to pay \$5 for their yearbook. 198 students said "yes." This is 88% of the senior class. How many seniors are there in the high school?

225

3.8: Rewrite equations and formulas

- Be able to solve a literal equation for a variable

Ex: The area of a circular ring is found by using the formula $A = 4\pi rw$

a) Solve for p .

b) Find p when the area is 905 square feet

$p = \frac{A}{4\pi w}$

and the width is 9 feet

About 8 feet

- Be able to write equations in function form

Ex: $4x - 2y = -18$

$$y = 2x + 9$$

Ex: $4y - x = 20$

$$y = \frac{1}{4}x + 5$$