Algebra 1
Review Ch. 2 (MCT is Mon.)

Quiz 2.7-2.8

Evaluate each expression if $m = -8$, $n = 4$, and $p = -12$.

47. $|3m - n|$

48. $|-2p + m| - 3n$

49. $-3|6n - 2p|$

Solve each equation. Then graph the solution set.

51. $|x - 6| = 11$

52. $|-4w + 2| = 14$

53. $\left|\frac{1}{3}d - 6\right| = 15$

2-6 Ratios and Proportions

Determine whether each pair of ratios are equivalent ratios. Write *yes* or *no*.

55. $\frac{27}{45}, \frac{3}{5}$

56. $\frac{18}{32}, \frac{3}{4}$

Solve each proportion. If necessary, round to the nearest hundredth.

57. $\frac{4}{9} = \frac{a}{45}$

2-7 Percent of Change

State whether each percent of change is a percent of *increase* or a percent of *decrease*. Then find the percent of change. Round to the nearest whole percent.

61. original: 40, new: 50

62. original: 36, new: 24

63. original: $72, new: $60

$\frac{10}{40} = \frac{p}{100}$

$40p = 1000$

$p = 25\%$

Find the total price of each item.

64. boots: \$64, tax: 7%

65. video game: \$49, tax: 6.5%

66. hockey skates: \$199, tax: 5.25%

Find the discounted price of each item.

67. digital media player: \$69.00, discount: 20%

68. jacket: \$129, discount: 15%

69. backpack: \$45, discount: 25%

$64(0.07) = 4.48$

$64.00 + 4.48 = \$68.48$

$69(0.2) = 13.80$

$69.00 - 13.80 = \$55.20$

2-8 Literal Equations and Dimensional Analysis

Solve each equation or formula for the variable indicated.

71. $3x + 2y = 9$, for y

72. $P = 2\ell + 2w$, for ℓ

73. $-5m + 9n = 15$, for m

74. $14w + 15x = y - 21w$, for w

$-3x \quad -3x$

$\frac{2y}{2} = \frac{-3x+9}{2}$

$y = \frac{-3x+9}{2}$

$y = -\frac{3x}{2} + \frac{9}{2}$

$14w + 15x = y \quad -21w \quad +21w$

$35w + 15x = y$

$-15x \quad -15x$

$\frac{35w}{35} = \frac{y-15x}{35}$

$w = \frac{y-15x}{35}$

2-1 Writing Equations

Translate each sentence into an equation.

9. The sum of five times a number x and three is the same as fifteen.

$5x + 3 = 15$

10. Four times the difference of b and six is equal to b squared.

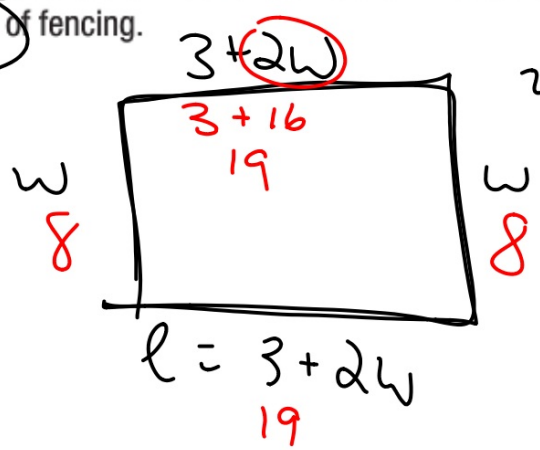
$4(b - 6) = b^2$

Translate each equation into a sentence.

12. $3p \oplus 8 = 20$ The sum of the product of 3 and p plus 8 equals 20

13. $h^2 - 5h + 6 = 0$

15. FENCING Adrianne wants to create an outdoor rectangular kennel. The length will be three feet more than twice the width. Write and use an equation to find the length and the width of the kennel if Adrianne has 54 feet of fencing.



$2(3+2w)+2w = 54$

$6+4w+2w = 54$

$6+6w = 54$

$-6 \quad -6$

$\frac{6w}{6} = \frac{48}{6}$

$w = 8$

B − 4 B

24. **AGE** Max is four years younger than his sister Brenda. Max is 16 years old. Write and solve an equation to find Brenda's age.

$16 = B - 4$

$+4 \quad +4$

$20 = B$

$B = 16 + 4$

27. $14 = -8 - 2k$

29. $\frac{r+4}{3} = 7$

$14 = -8 - 2k$

$+8 \quad +8$

$\frac{22}{-2} = \frac{-2k}{-2}$

$k = -11$

$\frac{r+4}{3} \times \frac{7}{1}$

$r + 4 = 21$

$-4 \quad -4$

$r = 17$

2-4 Solving Equations with the Variable on Each Side

Solve each equation. Check your solution.

37. $8m + 7 = 5m + 16$

$-5m \quad -5m$

$3m + 7 = 16$

$-7 \quad -7$

$\frac{3m}{3} = \frac{9}{3}$

$m = 3$

41. $\frac{6r-7}{10} = \frac{r}{4}$

$10r = 4(6r-7)$

$10r = 24r - 28$

$-24r \quad -24r$

$\frac{-14r}{-14} = \frac{-28}{-14}$

$r = 2$

42. $3(p+4) = 33$

53. $\left|\frac{1}{3}d - 6\right| = 15$

$\frac{1}{3}d - 6 = -15$

$+6 \quad +6$

$3 \cdot \frac{1}{3}d = -9 \cdot 3$

$d = -27$

$\frac{1}{3}d - 6 = 15$

$+6 \quad +6$

$3 \cdot \frac{1}{3}d = 21 \cdot 3$

$d = 63$