

Algebra 1
Review Ch. 2 (mostly MS content)

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

47. $|3m - n|$

$$|(3 \cdot -8 - 4)|$$

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

$$|(-24 + -4)| \text{ Subs.}$$

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

$$|-28| \text{ Subs.}$$

GEMA

28

ans. val.

1.3

p. 16 ish

Solve each equation. Then graph the solution set.

51. $|x - 6| = 11$

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

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

$$\begin{array}{r} -4w + 2 = -14 \\ \quad -2 \quad -2 \\ \hline -4w = -16 \\ \quad \underline{-4} \quad \underline{-4} \\ w = 4 \end{array}$$

$$\begin{array}{r} -4w + 2 = 14 \\ \quad -2 \quad -2 \\ \hline -4w = 12 \\ \quad \underline{-4} \quad \underline{-4} \\ w = -3 \end{array}$$

2-6 Ratios and Proportions

Determine whether each pair of ratios are equivalent ratios.

Write *yes* or *no*.

55. $\frac{27}{45}, \frac{3}{5}$ $\frac{3}{9}$. . .

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

$\frac{18}{32} = \frac{9}{16}$ $\frac{3}{4} = \frac{6}{8}$

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

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

$72 \neq 96$

$\frac{9a}{9} = \frac{180}{9}$
 $a = 20$

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

iner $\frac{10}{40}$ 25%

62. original: 36, new: 24

63. original: \$72, new: \$60

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%

$$64 + \text{tax} \\ (.07)(64)$$

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%

$$64 + 4.48 \\ \$68.48$$

$$129 - \text{disc.} \\ (.15)(129) \\ 129 - 19.35 = \$109.65$$

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

$$\begin{aligned} 3x + 2y &= 9 \\ -3x &\quad -3x \\ \hline 2y &= -3x + 9 \\ \frac{2y}{2} &= \frac{-3x}{2} + \frac{9}{2} \\ y &= -\frac{3}{2}x + \frac{9}{2} \end{aligned}$$

$$m = \frac{9}{5}n - 3$$

$$\begin{aligned} 2 \cdot 9 - 5 &= 13 \\ 18 - 5 &= 13 \\ 2x - 5 &= 13 \\ +5 \quad +5 \\ \hline 2x &= 18 \\ \frac{2x}{2} &= \frac{18}{2} \\ x &= 9 \end{aligned}$$

$$\begin{aligned} -5m + 9n &= 15 \\ -9n \quad -9n \\ \hline -5m &= -9n + 15 \\ \frac{-5m}{-5} &= \frac{-9n}{-5} + \frac{15}{-5} \\ m &= \frac{9}{5}n + 3 \end{aligned}$$

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

$$\begin{array}{c} ? + ? \\ \cdot \quad \cdot \\ 5x + 3 = 15 \end{array}$$

Translate each equation into a sentence.

12. $\overbrace{3p + 8} = \overbrace{20}$

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

The sum of 3 times p and 8 is the same as 20
equals
is

15. **FENCING** Adrienne 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 Adrienne has 54 feet of fencing.



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

$$6w + 6 = 54$$

$$\begin{array}{r} 6w + 6 = 54 \\ -6 \quad -6 \\ \hline 6w = 48 \\ \hline w = 8 \end{array}$$

length 19 ft
width 8 ft

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. $B = ?$

$$\text{max} = \text{Brenda} - 4$$

$$\begin{array}{r} 16 = B - 4 \\ +4 \quad \quad +4 \\ \hline 20 = B \end{array}$$

Brenda 20 yrs

$$27. \underline{14 = -8 - 2k}$$

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

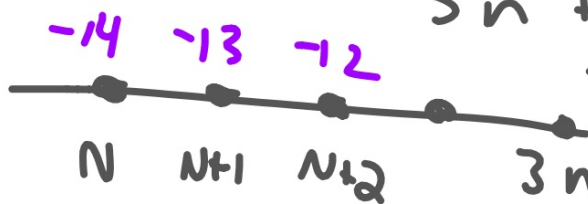
$$3. \frac{\overset{17+4}{(r+4)}}{3} = 7 \cdot 3$$

$$\begin{array}{r} r+4 = 21 \\ -4 \quad -4 \end{array} \quad r = 17$$

36. **CONSECUTIVE INTEGERS** Find three consecutive integers with a sum of -39 .

$$(n) + (n+1) + (n+2) = -39$$

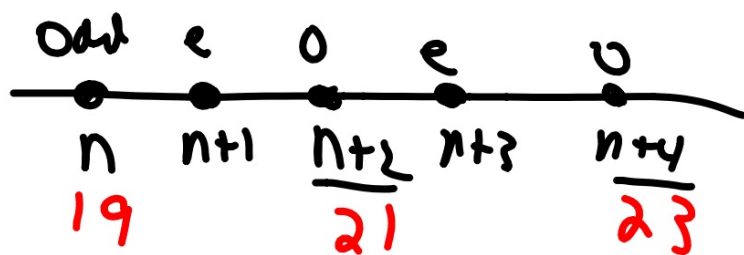
$$3n + 3 = -39$$
$$\quad \quad \quad -3 \quad \quad -3$$



$$\frac{3n}{3} = \frac{-42}{3} \quad n = -14$$

35. **CONSECUTIVE INTEGERS** Find three consecutive odd integers with a sum of 63.

$$(n) + (n+2) + (n+4) = 63$$



$$3n + 6 = 63$$

-6 -6

$$\frac{3n}{3} = \frac{57}{3} \quad n = 19$$

$$8 \cdot 3 + 7 = 5 \cdot 3 + 16$$

$$24 + 7 = 15 + 16$$

$$31 = 31$$

Solving Equations with the Variable on Each Side

Solve each equation. Check your solution.

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

$$\begin{array}{r} -5m \quad -5m \\ \hline \end{array}$$

$$3m + 7 = 16$$

$$\begin{array}{r} -7 \quad -7 \\ \hline \end{array}$$

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

$$m = \underline{\quad 3 \quad}$$

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

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

$3p + 12 = 33$

Write an equation and solve each problem.

- 45.** Find the sum of three consecutive odd integers if the sum of the first two integers is equal to twenty-four less than four times the third integer.

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

PT P.145
1-25