Algebra 1 2.4

Solve equations with the variable on each side.
Solve equations with grouping symbols.

identity
no solution
all real numbers

$2(10-3) = 14$

$2(x-3) = 14$

$2x - 6 = 14$

$+6 \quad +6$

$\frac{2x}{2} = \frac{20}{2}$

$x = 10$

Equations bingo (if time)

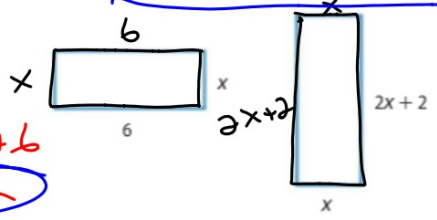
ConceptSummary Steps for Solving Equations

Step 1 Simplify the expressions on each side. Use the Distributive Property as needed.

Step 2 Use the Addition and/or Subtraction Properties of Equality to get the variables on one side and the numbers without variables on the other side. Simplify.

Step 3 Use the Multiplication or Division Property of Equality to solve.

4. Find the value of x so that the figures have the same perimeter.



F 1.5 G 2 H 3.2 J 4

$x + 6 + x + 6$

$2x + 12$

$x + 2x + 2 + x + 2x + 2$

$6x + 4$

$2x + 12 = 6x + 4$

$-2x \quad -2x$

$12 = 4x + 4$

$-4 \quad -4$

$8 = 4x$

$\frac{8}{4} = \frac{4x}{4}$

$2 = x$

10. $7c + 12 = -4c + 78$

$7c + 12 = -4c + 78$

$+4c \quad +4c$

$11c + 12 = 78$

$-12 \quad -12$

$\frac{11c}{11} = \frac{66}{11}$

$c = 6$

11. $2m - 13 = -8m + 27$

$-2m \quad -2m$

$-13 = -10m + 27$

$-27 \quad -27$

$\frac{-40}{-10} = \frac{-10m}{-10}$

$4 = m$

12. $9x - 4 = 2x + 3$

13 $6 + 3t = 8t - 14$

14. $\frac{b-4}{6} = \frac{b}{2}$

15. $\frac{5v-4}{10} = \frac{4}{5}$

16. $8 = 4(r+4)$

17. $6(n+5) = 66$

18. $5(g + 8) - 7 = 103$

19. $12 - \frac{4}{5}(x + 15) = 4$

20. $3(3m - 2) = 2(3m + 3)$

21. $6(3a + 1) - 30 = 3(2a - 4)$

$5(g+8)-7=103$

$5g+40-7=103$

$5g+33=103$

$-33 \quad -33$

$\frac{5g}{5}=\frac{70}{5}$

$g=14$

$5(14+8)-7=103$

$5(22)-7=103$

$5g+40-7=103$

$+7 \quad +7$

$5g+40=110$

$-40 \quad -40$

$5g=70$

$3(3m-2) = 2(3m+3)$

$9m - 6 = 6m + 6$
$-6m \quad -6m$

$3m - 6 = 6$
$+6 \quad +6$

$\frac{3m}{3} = \frac{12}{3}$

$m = 4$

$9m - 6 = 6m + 6$
$+6 \quad +6$

$9m = 6m + 12$
$-6m \quad -6m$

$3m = 12$

$12 + \frac{-4}{5}(10) = 4 \qquad 12 + -8 = 4$

$12 + \frac{-4}{5}(x + 15) = 4$

$12 + \frac{-4}{5}x + -12 = 4$

$\frac{-4}{5}x = 4 \qquad X = -5$

$\frac{-4}{5} \qquad \frac{-4}{5}$

Equations
bingo

$2x - 3 = 7$

$5x - 3 = 27$

$3x + 1 = 13$

$-2 = -3x + 16$

$5 = 2x - 13$

$2x - 2 = -10$

$4x - 5 = 15$

$-2x + 4 = -8$

$$2x + 8 = 24$$

$$-4x - 5 = 23$$

No Sol.

$$2(x+3) = 8 + 2x$$

$$2x + 6 = 8 + 2x$$

$$-2x \qquad -2x$$

$$6 = 8$$

$$5x + 3 = 2x + 3x + 7$$

$$5x + 3 = 5x + 7$$

$$-5x \qquad -5x$$

$$3 = 7$$