

Algebra 1 2.4

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

identity
no solution
all real numbers

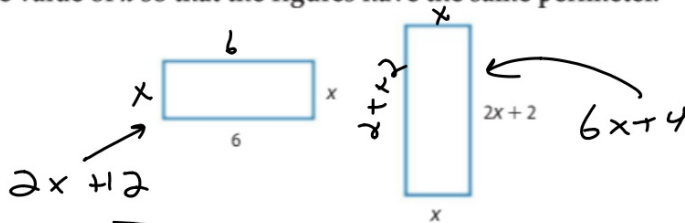
Equations bingo (if time)

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

$$2x + 12 = 6x + 4$$

$$\begin{array}{r} -2x - 4 \\ \hline \end{array}$$

$$x = 2 \quad \frac{8}{4} = \frac{4x}{4}$$

$$54 = 73$$

$$7 \cdot 6 + 12 = -46 + 78$$

$$42 + 12 = -24 + 78$$

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

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

$$12 = -11c + 78$$

$$\begin{array}{r} -78 \\ \hline \end{array}$$

$$\begin{array}{r} -66 = -11c \\ \hline -11 \\ \hline 6 = c \end{array}$$

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

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

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

$$\begin{array}{r} -2x \quad -2x \\ \hline \end{array}$$

$$7x - 4 = 3$$

$$\begin{array}{r} +4 \quad +4 \\ \hline 7x = 7 \end{array}$$

$$\begin{array}{r} 7x = 7 \\ \hline 7 \quad 7 \end{array}$$

$$x = 1$$

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

$$\begin{array}{r} -3t - 3t \\ \hline 6 = 5t - 14 \\ +14 \quad +14 \end{array}$$

$$\begin{array}{r} 20 = 5t \\ \hline 8 \quad 5 \quad t = 4 \end{array}$$

$$\begin{array}{r} b-4 = 3b \\ -b \quad -b \\ \hline \end{array}$$

$$14. \frac{b-4}{8} = \frac{b}{2} \quad \begin{array}{r} -4 = 2b \\ -2 = b \end{array}$$

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

$$\begin{array}{r} 8 = 4r + 16 \\ -16 \quad -16 \\ \hline \end{array}$$

$$\begin{array}{r} -8 = 4r \\ \frac{-8}{4} = \frac{4r}{4} \end{array}$$

$$r = -2$$

$$15. \frac{5v-4}{10} = \frac{4}{5} \cdot \frac{10}{1}$$

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

$$\begin{array}{r} 6n + 30 = 66 \\ -30 \quad -30 \\ \hline \end{array}$$

$$\begin{array}{r} 6n = 36 \\ \frac{6n}{6} = \frac{36}{6} \end{array}$$

$$n = 6$$

$$\begin{array}{r} 5v - 4 = 8 \\ +4 \quad +4 \\ \hline \end{array}$$

$$\begin{array}{r} 5v = 12 \\ \frac{5v}{5} = \frac{12}{5} \end{array}$$

$$v = 2.4$$

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

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

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

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

Equations
bingo