Algebra 1 1.5

Solve equations with one variable.

Solve equations with two variables.

open sentence

equation

solution makes = T $5 + ? = 8$

replacement set

element

solution set

$2x + 15 = 7x - y$

expression → $3x + 7$ ← $3x + 7 = 13$ ← equation

$3 \cdot 1 + 7 \stackrel{?}{=} 13$

$3 \cdot 2 + 7 \stackrel{?}{=} 13$

$6 + 7 = 13$

$x = 2$

Find the solution set of each equation if the replacement set is {11, 12, 13, 14, 15}.

1. $n + 10 = 23$ $n = 13$
2. $7 = \frac{c}{2}$ $c = \ldots$
3. $29 = 3x - 7$ $x = 12$
4. $(k - 8)12 = 84$ $k = 15$

$29 = 3x - 7$

$29 = 3 \cdot 11 - 7$

$33 - 7$

$29 = 3 \cdot 12 - 7$

$24 = 36 - 7$

$12k - 96 = 84$

$12 \cdot 11 - 96$

$12 \cdot 12 - 96$

$12 \cdot 13 - 96$

$12 \cdot 14 - 96$

$12 \cdot 15 - 96$

none

Solve each equation.

6. $27 = 4(6) + 3$ $\times -27$

$24 + 3$

8. $5 + 22a = 2 + 10 \div 2$

$5 + 22a = 7$

$-5 \qquad -5$

$\frac{22a}{22} = \frac{2}{22}$

$a = \frac{1}{11}$

$w = -68$

7. $14 + -82 = -68$

9. $(2 \cdot 5) + \frac{c^3}{3} = c^3 \div (1^3 2) + 10$

$10 + \frac{c^3}{3} = c^3 \div 3 + 10$

$10 + \frac{c^3}{3} = \frac{c^3}{3} + 10$

all numbers

Find the solution set of each equation if the replacement sets are y: {1, 3, 5, 7, 9} and z: {10, 12, 14, 16, 18}.

11. $z + 10 = 22$

12. $52 = 4z$ none

13. $\frac{15}{y} = 3$ $y = 5$

14. $17 = 24 - y$

$2 + 10 = 22$

Solve each equation.

19. $a = 32 - 9(8)$ $a = 14$

20. $w = 56 \div (4 + 3)$

$w = 8$

$w = 56 \div 7$

21. $\frac{(27 + 5)}{16} = g$

$\frac{32}{16}$

$g = 2$

22. $\frac{(12 \cdot 5)}{(15 - 3)} = y$

$\frac{60}{12} = y$

$5 = y \quad y = 5$

23. $r = \dfrac{9(6)}{(8+1)3}$

24. $a = \dfrac{4(14-1)}{3(6)-5} + 7$

25. $(4 - 2^2 + 5)w = 25$

26. $7 + x - (3 + 32 \div 8) = 3$

29. $6k + (3 \cdot 10 - 8) = (2 \cdot 3)k + 22$

30. $(3 \cdot 5)t + (21 - 12) = 15t + 3^2$

31 $(2^4 - 3 \cdot 5)q + 13 = (2 \cdot 9 - 4^2)q + \left(\frac{3 \cdot 4}{12} - 1\right)$

Make a table of values for each equation if the replacement set is {−2, −1, 0, 1, 2}.

37. $y = 3x - 2$

38. $3.25x + 0.75 = y$

Solve each equation using the given replacement set.

39. $t - 13 = 7$; $\{10, 13, 17, 20\}$

40. $14(x + 5) = 126$; $\{3, 4, 5, 6, 7\}$