

Unit 3 - Equations

Solving Equations with Brackets Section 7.5 Pg. 356-358	Remember BEDMAS— <u>Brackets</u> (i.e. multiply them out) First! Equations with Brackets, Variable on both Sides, Variable and Brackets on Both Sides Classwork p. 358: 2, 5, 7, 11, 14, 15, 17, 20, 24, 25, 27, 30, 32 <u>Homework p. 358: 4, 8, 10, 12, 13, 16, 19, 21, 23, 26, 28, 29, 31, 33, 34</u>
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- Notes:**
- SAMDEB still matters - for brackets we need the distributive property
 - inverse operations occur from one side of equation to the other
- Classwork - Pg: 358
- "Green is the best number" - Abe Moon.

Solve.

distributive 2. $2(x-3) = 2$

$$2x - 6 = 2$$

$$2x - 6 + 6 = 2 + 6$$

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

$$x = 4$$

Solve and check.

7. $2(3x+4) = 14$

$$6x + 8 = 14$$

$$6x = 14 - 8$$

$$6x = 6$$

$$x = \frac{6}{6}$$

$$x = 1$$

Check

LHS

$$2(3x+4)$$

$$2(3(1)+4)$$

$$= 2(7)$$

$$= 14$$

RHS

$$14$$

= LHS

✓

5. $3(x+2) = -9$

$$\Rightarrow 3x + 6 = -9$$

$$3x = -9 - 6$$

$$3x = -15$$

$$x = \frac{-15}{3}$$

$$= -5$$

trick

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

$$x+2 = -3$$

$$x = -3 - 2$$

$$= -5$$

11. $-24 = 4(x+3)$

$$\Rightarrow 4(x+3) = -24$$

$$x+3 = \frac{-24}{4}$$

$$x+3 = -6$$

$$x = -6 - 3$$

$$x = -9$$

Check

LHS

$$-24$$

RHS

$$4(x+3)$$

$$4(-9+3)$$

$$= 4(-6)$$

$$= -24$$

= LHS ✓

Solve.

Variables on left - constants on the right

14. $3(x+1) + 10 = 8 - 2x$

$3x + 3 + 10 = 8 - 2x$

$3x + 13 = 8 - 2x$

$3x + 2x = 8 - 13$

$5x = -5$

$x = \frac{-5}{5} = -1$

17. $5(2x-3) = 2(x-2) + 5$

$10x - 15 = 2x - 4 + 5$

$10x - 15 = 2x + 1$

$10x - 2x = 1 + 15$

$8x = 16$

$\frac{8x}{8} = \frac{16}{8}$

$x = 2$

24. $4(m-2) - (m+3) = m-1$

$4m - 8 - m - 3 = m - 1$

$3m - 11 = m - 1$

$3m - m = -1 + 11$

$2m = 10$

$m = \frac{10}{2}$

$= 5$

15. $8 - 3x = 4(x-3) + 6$

$8 - 3x = 4x - 12 + 6$

$8 - 3x = 4x - 6$

$-3x - 4x = -6 - 8$

$-7x = -14$

$x = \frac{-14}{-7} = 2$

20. $4(n+7) = -44 + 2(n+6)$

$4n + 28 = -44 + 2n + 12$

$4n + 28 = -32 + 2n$

$4n - 2n = -32 - 28$

$2n = -60$

$n = \frac{-60}{2}$

$= -30$

25. $4(n-7) - 2(n+3) = -15n$

$4n - 28 - 2n - 6 = -15n$

$2n - 34 = -15n$

$2n + 15n = 34$

$17n = 34$

$n = \frac{34}{17}$

$n = 2$

27. $3(2x+1) - (x-2) = 2(x+4)$

$$6x+3-x+2 = 2x+8$$

$$5x-2x = 8-5$$

$$3x = 3$$

$$x = 1$$

30. $7(x-1) - 2(x-6) = 2(x-5) + 6$

$$7x-7-2x+12 = 2x-10+6$$

$$5x+5 = 2x-4$$

$$5x-2x = -4-5$$

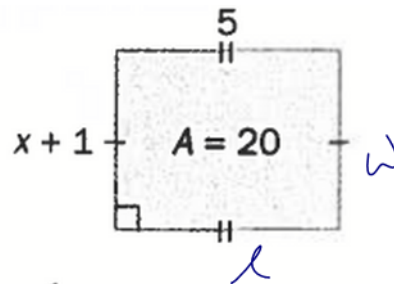
$$3x = -9$$

$$x = \frac{-9}{3} = -3$$

32. Measurement The equation $5(x+1) = 20$ represents the area of the rectangle.

a) Solve the equation.

b) Find the width of the rectangle.



$$5(x+1) = 20$$

$$5x+5 = 20$$

$$5x = 15$$

$$x = 3$$

$$b) w = x+1$$

$$= 3+1$$

$$= 4 \text{ units}$$