Name: _____ Date: _____

10.4 Modelling and Solving Two-Step Equations: $a(x + b) = c$

***MathLinks 8*, pages 394–399**

Key Ideas Review

For #1 to #4, unscramble the letters to form a word that correctly completes the statement.

1. To solve an equation, _____ (OITSLAE) the variable on one side of the equal sign.
2. When _____ (DIUONNG) the operations performed on the variable, use _____ (PTIOOPES) operations.
3. Solve equations in the form $a(x + b) = c$ by _____ (DDGIIINV) first, or by using the _____ (BDEIIISRTTUV) property.
4. Check your _____ (AENRSW) by substituting it back into the equation. Both _____ (EIDSS) should have the same value.

Practise and Apply

5. Solve the equation modelled by each diagram. Check your solution.

a) $x \quad -1 \quad -1$
$x \quad -1 \quad -1$
$= \quad +1 \quad +1 \quad +1 \quad +1$
$+1 \quad +1 \quad +1 \quad +1$

b) $+1 \quad +1 \quad +1$
$+1 \quad +1 \quad +1$
$+1 \quad +1 \quad +1$
$= \quad x \quad -1 \quad -1 \quad -1 \quad -1$
$x \quad -1 \quad -1 \quad -1 \quad -1$
$x \quad -1 \quad -1 \quad -1 \quad -1$

c) $-x \quad +1 \quad +1 \quad -1$
$-x \quad +1 \quad +1 \quad -1$
$-x \quad +1 \quad +1 \quad -1$
$-x \quad +1 \quad +1 \quad -1$

d) $x \quad +1 \quad -1 \quad -1 \quad -1$
$x \quad +1 \quad -1 \quad -1 \quad -1$
$x \quad +1 \quad -1 \quad -1 \quad -1$
$x \quad +1 \quad -1 \quad -1 \quad -1$
$x \quad +1 \quad -1 \quad -1 \quad -1$

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6. Model and then solve each equation. Check your solution.

a) $4(t - 5) = 8$

b) $5(r + 7) = -55$

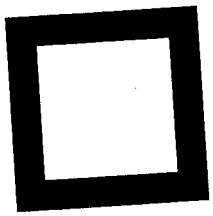
7. Solve each equation. Check your answer.

a) $-3(x - 8) = 12$

b) $600 = 4(s + 4)$

c) $2(x - 3) = 6$

8. Beth would like to put a 2-m wide grass border around a square garden that has a perimeter of 44 m.



a) What equation models this situation?

b) If she wants a fence around the outside of the grass border, what length of fencing will she have to buy?

9. Aaron is driving to his friend's place 180 km away. If he can average a speed that is 5 km/h more than his current speed and then triple that, he will arrive in two hours.

a) Using s for his current speed, what equation models this situation?

b) Determine Aaron's speed.