

Name _____ Date _____

Patterns and Relations
Unit 3 Line Master 1a

Ways to Solve Linear Equations

1. Model then solve each equation. Use at least two different representations.
If you use concrete materials, sketch your representation.

a) $x + 8 = 14$

b) $6 + 2x = 12$

c) $14 = x + 7$

d) $2x + 3 = 17$

2. Solve each equation using a method of your choice.

a) $3x = 12$

b) $5 + 2x = 11$

c) $x - 2 = 9$

Patterns and Relations
Unit 3 Line Master 1b**Ways to Solve Linear Equations (cont'd)**

3. Sammy prefers to use only arithmetic to solve equations.

To solve the equation $3x + 2 = 17$, Sammy thinks:

"If 2 more than $3x$ is 17, then $3x$ must be $17 - 2$."

$$3x + 2 - 2 = 17 - 2$$

$$3x = 15$$

Sammy says that if $3x$ is 15, then x must be $15 \div 3$.

$$3x \div 3 = 15 \div 3$$

$$x = 5$$

- a) How can you relate Sammy's method to one of the models you use?
- b) How does Sammy's method ensure that both sides of the equation remain equal?
- c) Why might Sammy prefer this method over using a model?
4. Use Sammy's method to solve the equation $5x - 8 = -3$.