Ways to Solve Linear Equations

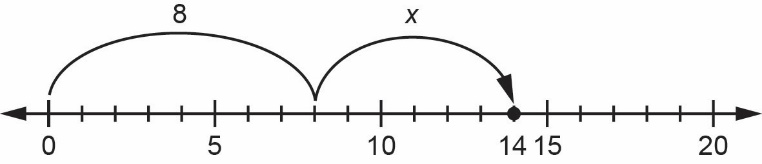
**Patterns and Relations**

**Unit 3 Line Master 1c**

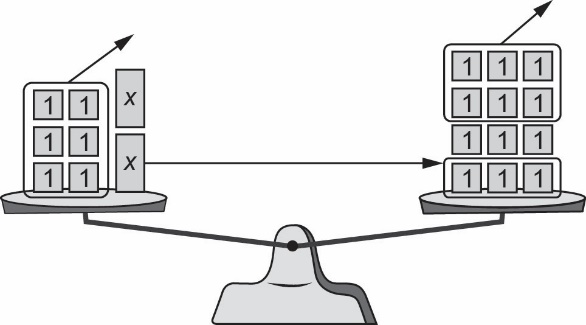
Answers

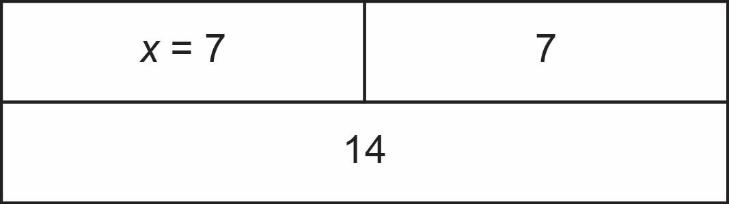
Models are all sample solutions.

1. a) *x* = 6

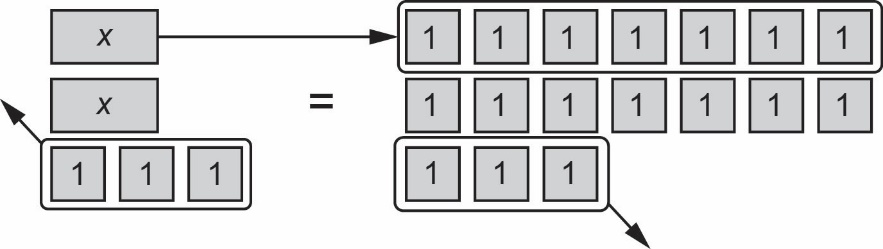


b) *x* = 3



c) *x* = 7  


d) *x* = 7

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**Answers** (cont’d)

2. a) For example: 3 times a number is 12. I know 3 × 4 = 12, so *x* = 4.

b) For example: 5 more than 2*x* is 11, so 2*x* must be 11 – 5, or 6.   
Then, 2 times a number is 6. I know 2 × 3 = 6, so *x* = 3.

c) For example: 2 less than a number is 9. So, the number must 9 + 2, or 11: *x* = 11

3. a) For example: I could model the equation using algebra tiles: I would have 3 *x* tiles and 2 unit tiles on the left and 17 unit tiles on the right. I would take away 2 unit tiles from both sides, leaving 3 *x* tiles on the left and 15 unit tiles on the right. Then I would match each *x* tile to an equal number of unit tiles on the right, which is the same as dividing the 15 unit tiles into 3 equal groups.

b) For example: Sammy’s method always makes sure that the same operation is applied to both sides. When 2 is taken away from both sides, both sides still have the same amount. When both sides are divided by 3, each side is as big.

c) For example: Sammy can use this method with all types of numbers, whereas   
it might be difficult to use some models, like algebra tiles or a pan balance, when the numbers are fractions or decimals, of when the answer is a fraction or decimal.

4.

*x* = 1