Example #1 Solve + =

Decomposition:

$5 + \quad = 12$

$5 + \quad = 5 + 7$

$\not{5} + \quad = \not{5} + 7$

$\quad = 7$

You Try #1 Solve $11 = x + 4$

*Side-by-Side Comparison
*Multiple Methods

Decomposition:

$11 = \quad + 4$

$4 + 7 = \quad + 4$

$\cancel{4} + 7 = \quad + \cancel{4}$

$7 =$

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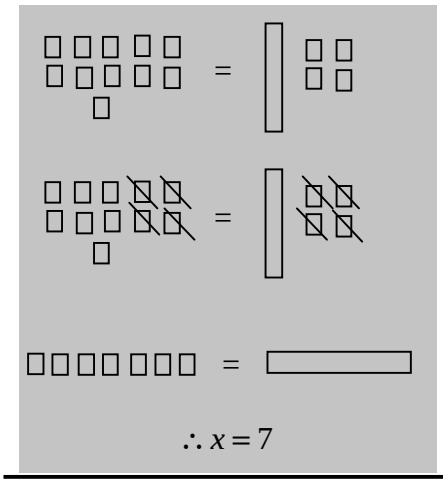
Algebra Tiles:

$11 = x + 4$



$\therefore x = 7$

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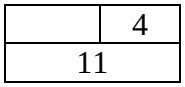
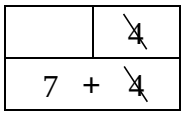
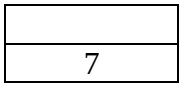
Bar Model:

$= x +$




$\therefore x = 7$

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Inverse Operation:

$= \quad +$

$! \quad = \quad + \quad !$

$= \quad + 0$

$=$

Example #3 Solve $3 = 12$

Decomposition:

$x =$

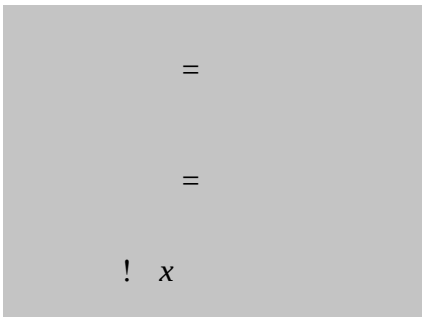
$\bullet\, x = \bullet$

$\diagup\!\bullet\, x = \diagup\!\bullet$

$x =$

Algebra Tiles:

$x =$



You Try #3 Solve $4x = 16$.

Decomposition:

$4 = 16$

$\frac{4}{4} \bullet = \frac{4}{4} \bullet 4$

$= 4$

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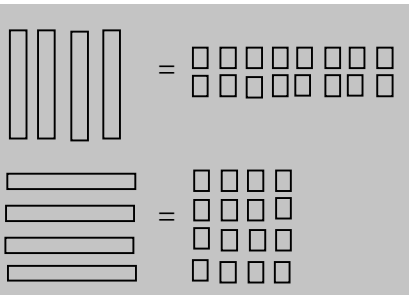
Algebra Tiles:

4 16



$\therefore\ x = 4$

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Bar Model:

$x =$

| $x$ | $x$ | $x$ | $x$ |
|---|---|---|---|
| 16 | | | |

| $x$ | | $x$ | $x$ |
|---|---|---|---|
| 4 | 4 | 4 | 4 |

| |
|---|
| 4 |

=

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Inverse Operation:

$4x = 16$

$\frac{4x}{4} = \frac{16}{4}$

$1x = \frac{4 \bullet 4}{4}$

$x = 4$

---

Multiplicative Inverse:

Example #4 Solve $\frac{x}{4} = 5$.

Decomposition:

$\frac{x}{4} =$ $\quad -x =$ (Two ways to write the equation)

$$\frac{1}{4} = 5$$

$$\frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} = 5 + 5 + 5 + 5$$

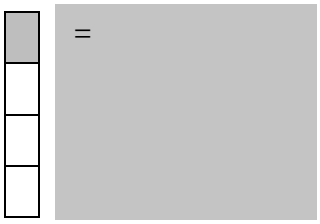
$$\frac{4}{4} = 20$$

$$1 = 20$$

$$= 20$$

Algebra Tiles:

$\frac{x}{4} = 5$



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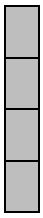

$\therefore$ =

Bar Model:

Inverse Operation:

Inverse Operation:

$$\frac{x}{3}=4$$

$$3\left(\frac{x}{3}\right)=3(4)$$

$$1x=12$$

$$x=12$$

Multiplicative Inverse: