## Lesson 12: Equations with Unknowns

* Let’s represent equations with a ? for the unknown.

### Warm-up: True or False: Making Tens

Decide if each statement is true or false. Be prepared to explain your reasoning.

* $40=10+27+3$
* $47=20+7+3+10$
* $60=3+47+10$

### 12.1: Number Line Riddles

Solve riddles to find the mystery number.

For each riddle:

* Write an equation that represents the riddle and write a ? for the unknown.
* Write the mystery number. Represent the equation on the number line.
1. I started at 15 and jumped 17 to the right. Where did I end?
* Equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Mystery number: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
1. I started at a number and jumped 20 to the left. I ended at 33. Where did I start?
* Equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Mystery number: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
1. I started on 42 and ended at 80. How far did I jump?
* Equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Mystery number: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
1. I started at 76 and jumped 27 to the left. Where did I end?
* Equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Mystery number: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
1. I started at a number and jumped 19 to the right. I ended at 67. Where did I start?
* Equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Mystery number: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
1. I started at 92 and ended at 33. How far did I jump?
* Equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Mystery number: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



### 12.2: Make the Equations True

Find the number that makes each equation true.

Show your thinking on the number line.

1. $?−48=19$
2. $86−?=39$
3. $?+57=72$
4. $73+?=91$



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