

• Example 1

The sum of a number and 5 is 17. What is the number?

In symbols, the problem amounts to finding a number x such that

$$x + 5 = 17$$

$$x + 5 - 5 = 17 - 5 \quad \text{Subtract 5.}$$

$$x = 12$$

So the number is 12.

Check. Is the sum of 12 and 5 equal to 17? Yes ($12 + 5 = 17$). We have checked our solution.

● ● ● CHECK YOURSELF 1

The sum of a number and 8 is 35. What is the number?

● ● ● CHECK YOURSELF ANSWER

1. The equation is $x + 8 = 35$. The number is 27.
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2.20 Exercises

Name _____

Section _____

Date _____

A N S W E R S

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

Solve the following word problems. Be sure to label the unknowns and to show the equation you use for the solution.

1. Number problem. The sum of a number and 7 is 33. What is the number?

2. Number problem. The sum of a number and 15 is 22. What is the number?

3. Number problem. The sum of a number and -15 is 7. What is the number?

4. Number problem. The sum of a number and -8 is 17. What is the number?

5. Number of votes cast. In an election with only two candidates, the winning candidate has 1840 votes. If the total number of votes cast was 3260, how many votes did the losing candidate receive?

6. Number problem. If the sum of two consecutive integers is 85, find the two integers.

7. Number problem. The sum of three consecutive odd integers is 57. What are the three integers?