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## worksheet

From the following problems, explain your solutions.

- 1) The sum of two numbers is  $-42$ , and their difference is  $52$ . What are these two numbers?

Let  $x$  be a number and let  $y$  be another number.

$$x + y = -42 \quad \text{---} \quad ①$$

$$x - y = 52 \quad \text{---} \quad ②$$

$$① + ② \quad 2x = \boxed{10} \quad \text{---} \quad ②$$

$$x = \frac{10}{2}$$

$$x = \boxed{5}$$

Substitute the value of  $x$  in ①.

$$5 + y = \boxed{}$$

$$y = \boxed{}$$

$$y = \boxed{-47}$$

Therefore, these two numbers are  $5$  and  $-47$ .

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## worksheet

- 2) The difference of two numbers is 16, and three times the larger number is nine times as much as the smaller number. What are these two numbers?

Let  $x$  be the larger number and let  $y$  be the smaller number.

$$x - y = \boxed{\quad} \quad \text{--- ①}$$

$$3x = 9y \quad \text{--- ②}$$

From ②  $x = 3y \quad \text{--- ③}$

From ③, substitute the value of  $x$  in ①.

$$3y - y = 16$$

$$\boxed{\quad} = 16$$

$$y = \frac{16}{2}$$

$$y = \boxed{\quad}$$

Substitute the value of  $y$  in ③.

$$x = 3(8)$$

$$x = \boxed{\quad}$$

Therefore, these two numbers are 8 and  $\boxed{\quad}$