

C11 - 4.7 - Quadratic Word Problems

The sum of a number and its square is six. Find the number.

Let $x = 1st \#$

$$\begin{aligned}x + x^2 &= 6 \\x^2 + x - 6 &= 0 \\(x - 2)(x + 3) &= 0\end{aligned}$$

$$\begin{array}{r} \underline{-2} \quad \times \quad \underline{3} \quad = -6 \\ \underline{-2} \quad + \quad \underline{3} \quad = 1 \end{array}$$

$$x - 2 = 0$$

$$x = 2$$

$$\begin{aligned}x + x^2 &= 6 \\2 + 2^2 &= 6 \\6 &= 6\end{aligned}$$



$$x + 3 = 0$$

$$x = -3$$

$$\begin{aligned}x + x^2 &= 6 \\-3 + (-3)^2 &= 6 \\-3 + 9 &= 6 \\6 &= 6\end{aligned}$$



The difference of a number and its square is 30. Find the number. *Tricky

Find two numbers who sum to 5 and multiply to 6. Find the numbers.

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Find two consecutive integers whose product is 156.

The product of two consecutive odd integers is 35. Find the numbers.

The sum of the squares of two consecutive integers is 61. Find the numbers.

The difference of squares of two consecutive odd numbers is -24 . Find the numbers.