

3-11 More Expressions and Equations

$$No = \quad +$$

Write an expression for the sum of two consecutive integers

Let: $n = 1st \#$

$$n+1 = 2nd \#$$

$$\begin{array}{ccc} 1st \# & + & 2nd \# \\ \downarrow & & \downarrow \\ n & + & n+1 \end{array}$$

Write an expression for the sum of an even integer and the next consecutive even integer.

Let:

$$n = 1st$$

$$n+2 = 2nd$$

$$\begin{array}{ccc} 1st & + & 2nd \\ \downarrow & & \downarrow \\ n & + & (n+2) \end{array}$$

⁺
 The sum of an integer and twice the next consecutive integer is 29.
 What are the integers?

Let: $n = 1^{\text{st}} \# = 9$

$2(n+1) = 2^{\text{nd}} \#$

$2(9+1) = 2(10) = 20$

$1^{\text{st}} \# + 2^{\text{nd}} \# = 29$

$\downarrow \quad \quad \downarrow$
 $n + 2(n+1) = 29$

$n + 2n + 2 = 29$
 $3n + 2 = 29$

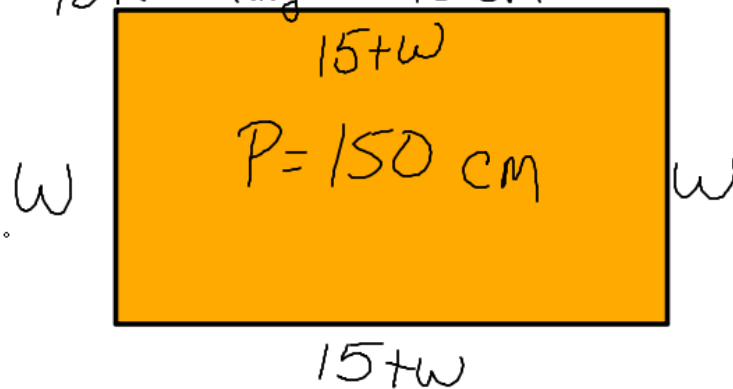
$3n + 2 = 29$
 $\quad \quad -2 \quad -2$

$n = 9$

The perimeter of a ^{rectangle} rectangle is 150 cm. The length is 15 cm greater than the width. Find the dimensions.

Let: $w = \text{width} = 30 \text{ cm}$

$15 + w = \text{length} = 45 \text{ cm}$



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$$15 + w + w + 15 + w + w = 150$$

$$\begin{array}{r} 4w + 30 = 150 \\ -30 \quad -30 \end{array}$$

$$\frac{4w}{4} = \frac{120}{4}$$

$$w = 30 \text{ cm}$$