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### Example 2

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Find the measure of an angle whose complement is  $30^\circ$  more than its measure.

Let's call the measure of the angle  $x$ . Then we can express its complement  $x + 30$ .

Since the two angles are *complementary*, their sum must be  $90^\circ$ .

Therefore, we get the following equation:

$$(x) + (x + 30) = 90$$

Now we can solve for  $x$ :

$$(x) + (x + 30) = 90$$

$$\begin{array}{r} 2x + 30 = 90 \\ \underline{-30 \quad -30} \\ 2x \qquad = 60 \\ \underline{\quad \quad \quad 2} \end{array}$$

$$\boxed{x = 30}$$

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Example 3

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Find the measure of an angle whose supplement is four times its measure.

Let \_\_\_\_\_ represent the measure of the angle

Then \_\_\_\_\_ represents its supplement.

Since the two angles are supplementary, their sum must be \_\_\_\_\_.

Therefore, we get the following equation:

$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

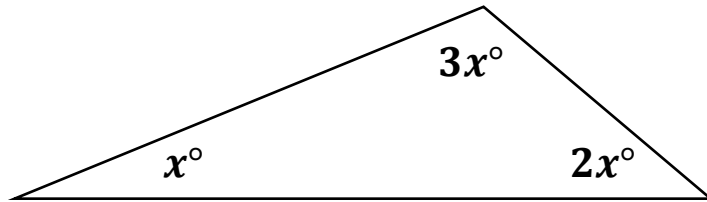
Now solve for  $x$ :

Applications of Linear Equations:  
Problems from Geometry

Practice Problems

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1. Find each angle measurement for the triangle below:



2. Find the measure of an angle whose complement is twice its measure.
3. Find the measure of an angle whose supplement is **9** times its measure.