

Solve Linear Equations Worksheets

For each of the following problems, write an equation and solve.

1. The measure of one angle is thirteen less than five times the measure of another angle. The sum of the measures of the two angles is 140° . Determine the measure of each angle in degrees.

2. An angle measures seventeen more than three times a number. Its supplement is three more than seven times the number. What is the measure of each angle in degrees?

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For each of the following problems, write an equation and solve.

1. The measure of one angle is thirteen less than five times the measure of another angle. The sum of the measures of the two angles is 140° . Determine the measure of each angle in degrees.

Let x be the measure of the one angle. Then, the measure of the other angle is $5x - 13$.

$$x + 5x - 13 = 140$$

$$6x - 13 = 140$$

$$6x - 13 + 13 = 140 + 13$$

$$6x = 153$$

$$x = 25.5$$

Since one angle measure is x , it is 25.5° . Replacing x with 25.5 in $5x - 13$ gives $5(25.5) - 13 = 140 - 25.5 = 114.5$. Therefore, the other angle measures 114.5° .

2. An angle measures seventeen more than three times a number. Its supplement is three more than seven times the number. What is the measure of each angle in degrees?

Let x be the number. Then, the measure of one angle is $3x + 17$. The measure of the other angle is $7x + 3$. Since the angles are supplementary, the sum of their measures will be 180.

$$3x + 17 + 7x + 3 = 180$$

$$10x + 20 = 180$$

$$10x + 20 - 20 = 180 - 20$$

$$10x = 160$$

$$x = 16$$

Replacing x with 16 in $3x + 17$ gives $3(16) + 17 = 65$. Replacing x with 16 in $7x + 3$ gives $(16) + 3 = 112 + 3 = 115$. Therefore, the angle measures are 65° and 115° .