

Content Objective: I will be able to write and solve equations that represent the measurements of supplementary or complementary angles.

decreased	more	difference	double	increased	less
ratio	sum	out of	product	quotient	total
		triple	twice		

Using the Word Bank above, match the "hint words" to the operations that they suggest.

ADDITION	SUBTRACTION	MULTIPLICATION	DIVISION
more increased sum total	decreased difference less	double product triple twice	out of quotient ratio

EXAMPLE 1:
Using the "hint words" translate the verbal expressions below into algebraic expressions.

a. 3 less than a number b. 7 more than the product of a number and six

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Notes: SOLVING FOR SUPPLEMENTS & COMPLEMENTS

TERM	DESCRIPTION	EXAMPLE
COMPLEMENTARY	Two angles that have a sum of 90° .	
SUPPLEMENTARY	Two angles that have a sum of 180° .	

For Examples #2 – 3, translate the verbal expressions into algebraic expressions. Then set and solve equations that will help you determine the measure of each angle described.

EXAMPLE 2: Find the measure of an angle if its measure is 78° less than its complement.

$m\angle X = \underline{\hspace{2cm}}$
 $m\angle Y = \underline{\hspace{2cm}}$

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EXAMPLE 1:
Using the "hint words" translate the verbal expressions below into algebraic expressions.

a. 3 less than a number b. 7 more than the product of a number and six

$X - 3$ $6X + 7$

c. the sum of eleven and triple a number d. double a number decreased by thirteen

$11 + 3X$ $2X - 13$

QUICK CHECK: Translate the verbal expressions into algebraic expressions.

a. the difference of twice a number and fourteen b. The quotient of a number and eight increased by fifteen

$2X - 14$ $\frac{X}{8} + 15$

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SUPPLEMENTARY Two angles that have a sum of $\underline{\hspace{2cm}}$.

For Examples #2 – 3, translate the verbal expressions into algebraic expressions. Then set and solve equations that will help you determine the measure of each angle described.

EXAMPLE 2: Find the measure of an angle if its measure is 78° less than its complement.

$m\angle X = \underline{62}^\circ$ $m\angle Y = \underline{84}^\circ$

QUICK CHECK: Find the measure of an angle if its supplement is triple that of its complement.

$m\angle X = \underline{\hspace{2cm}}$
 $m\angle Y = \underline{\hspace{2cm}}$

QUICK CHECK: Find the measure of an angle if the measure of its complement is 48° more than twice the measure of the angle.

$m\angle X = \underline{\hspace{2cm}}$
 $m\angle Y = \underline{\hspace{2cm}}$

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QUICK CHECK: Find the measure of an angle if the measure of its complement is 48° more than twice the measure of the angle.

$m\angle X = \underline{\hspace{2cm}}$
 $m\angle Y = \underline{\hspace{2cm}}$

EXAMPLE 3: Find the measure of an angle if its measure is 81° more than twice its supplement.

$m\angle X = \underline{147}^\circ$
 $m\angle Y = \underline{33}^\circ$

QUICK CHECK: Find the measure of an angle if its measure is 60° more than that of its supplement.

$m\angle X = \underline{120}^\circ$
 $m\angle Y = \underline{60}^\circ$

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