7.2

Complementary and Supplementary Angles

Review

Solve the following:

1) $x + 12 = 71$

2) $x - 8 = 23$

Review

Solve the following:

3) $7x = 56$

4) $4x = 68$

Review

Solve the following:

5) $4x + 2 = 30$

6) $6x - 7 = 47$

Review

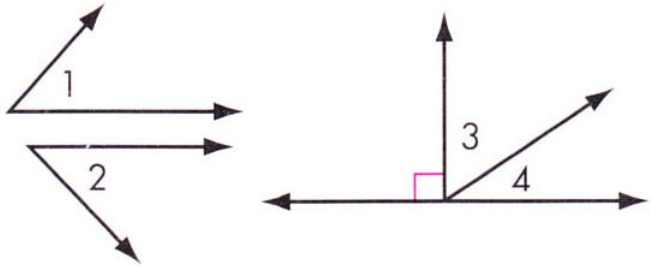
Solve the following:

7) $x + 2x + 2 = 23$

8) $15 + (5x + 2) = 42$

1) Define complementary angles

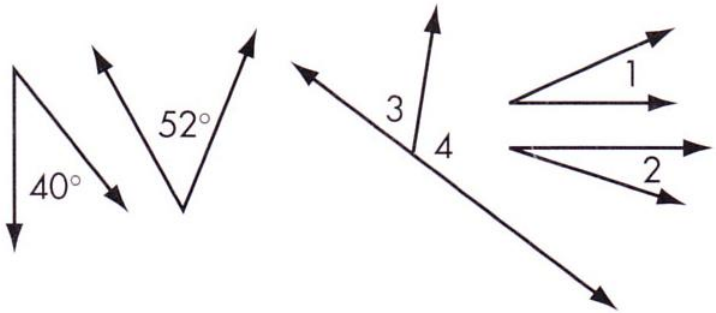
Pairs of complementary angles



$m\angle 1 + m\angle 2 = 90^\circ$

$m\angle 3 + m\angle 4 = 90^\circ$

Not pairs of complementary angles

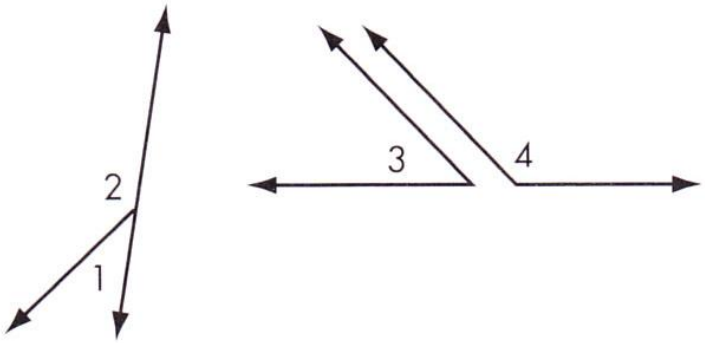


$m\angle 1 + m\angle 2 < 90^\circ$

Note: Sometimes it's convenient to name angles in a diagram with a number.

2) Define supplementary angles

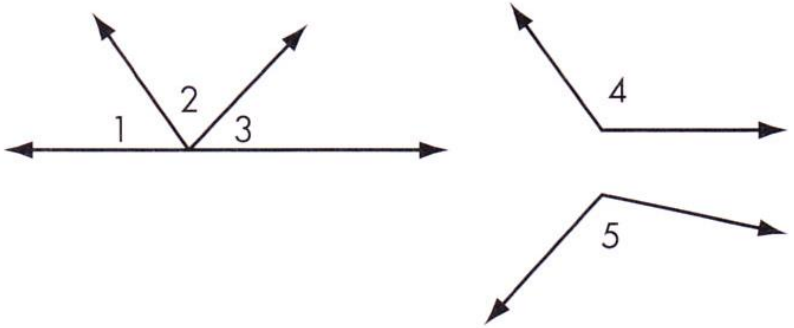
Pairs of supplementary angles



$m\angle 1 + m\angle 2 = 180^\circ$

$m\angle 3 + m\angle 4 = 180^\circ$

Not pairs of supplementary angles



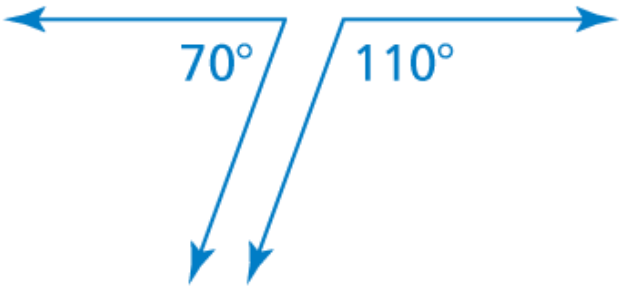
$m\angle 1 + m\angle 2 < 180^\circ$

$m\angle 4 + m\angle 5 > 180^\circ$

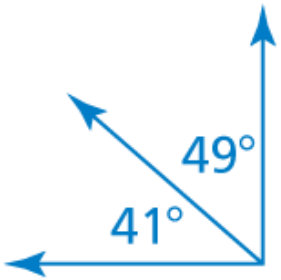
Practice

Tell whether the angles are *complementary*, *supplementary*, or *neither*.

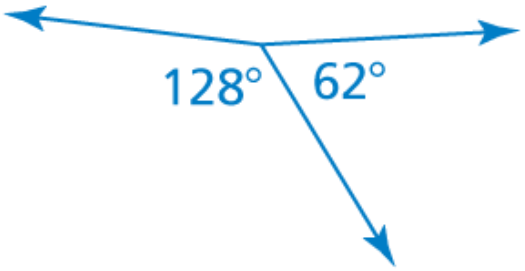
a.



b.



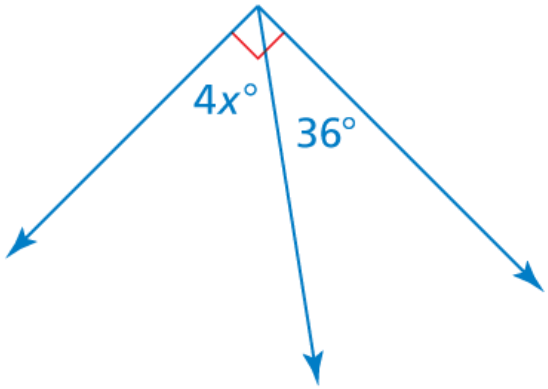
c.



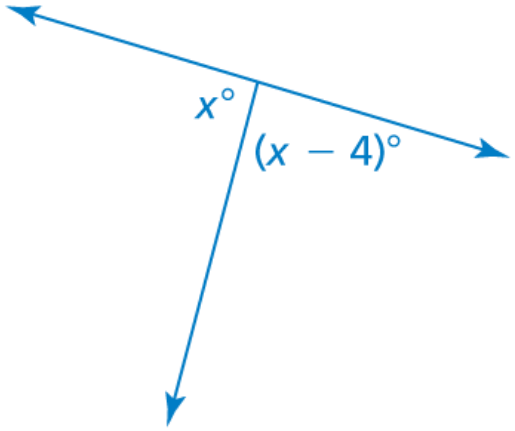
Practice

Tell whether the angles are *complementary* or *supplementary*. Then find the value of x.

a.



b.



Do you understand?

Use the given information to solve each problem.

Angle 1 and 2 are *complementary*.

$$m\text{Đ}1 = x° \text{ and } m\text{Đ}2 = 2x°$$

a) Write an equation and find the value of x.

b) Use the value of x to find the measure of angle 2.

Practice

Draw a pair of adjacent supplementary angles so that one angle has a measure of 60°.