

practice

Wednesday, September 11, 2013
8:38 AM

2.2 Complementary and Supplementary Angles

1. An angle measure is $23^\circ 42' 17''$. Find the supplement and complement of the angle.

$$\text{comp} = 66^\circ 17' 43'' \quad \text{supp} = 156^\circ 17' 43''$$

2. The measure of one of two complementary angles is three greater than twice the measure of the other. Find the measure of each angle.

$$x = 2(90 - x) + 3$$

$$x = 180 - 2x + 3$$

$$3x = 183$$

$$x = 61$$

$$29$$

$$90 - x = 2x + 3$$

$$87 = 3x$$

$$29 = x$$

$$61$$

Don't solve in the next six problems. Just set up an equation you could solve to determine the angle measure, x .

3. An angle measure is 40° less than three times the complement of the angle.

$$x = 3(90 - x) - 40$$

Claire

4. Twenty degrees less than the supplement of an angle is twice the complement of the angle.

$$(180 - x) - 20 = 2(90 - x)$$

Will

$$180 - (90 - x)$$

5. The supplement of the complement of an angle is three times the angle measure.

$$180 - (90 - x) = 3x$$

6. Six times the complement of an angle is 50° more than the supplement.

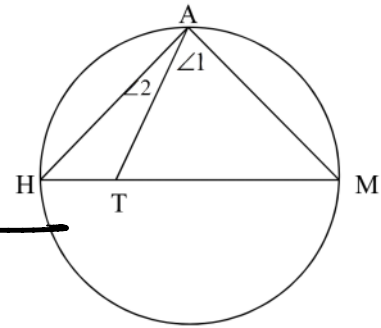
$$6(90 - x) = (180 - x) + 50$$

7. The sum of a 8 times an angle and its complement is 70° more than twice the measure of the supplement of the complement.

$$8x + (90 - x) = 2(180 - (90 - x)) + 70$$

8. Solve for four-fifths of the complement of the angle described in problem 6 above.

9. Given: $\overline{HA} \perp \overline{AM}$
 Prove: $\angle 1$ is complementary to $\angle 2$



1) $\overline{HA} \perp \overline{AM}$

2) $\angle HAM$ is 90°

3) $\angle 1 + \angle 2 = 90^\circ$

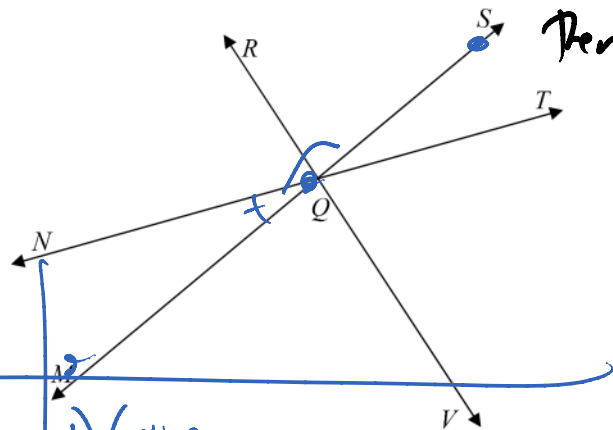
4) $\angle 1$ is comp to $\angle 2$

3) \angle addition postulate

4) If 2 \angle 's add to 90° ,

Then they are comp

10. Given: Diagram at right
 Prove: $\angle MQN$ is supplementary to $\angle NQS$



1) Diagram

2) $\angle MQS$ is a str. \angle

3) $\angle MQS = 180^\circ$

4) $\angle MQN + \angle NQS = 180^\circ$

5) $\angle MQN$ is supp to $\angle NQS$

1) Given

2) Assumed

3) If an \angle is a str. \angle , then it $= 180^\circ$.

4) \angle addition postulate

5) If 2 \angle 's add to 180° , then they are supp.