2.2

Wednesday, August 31, 2016 8:25 PM

If 2 angles are complementary, then they form a right angle. Converse is also true
If 2 angles are supplementary, then they form a straight angle.

Geometry Honors **Name:**

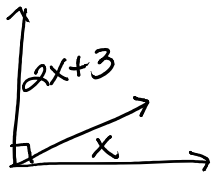
2.2 Complementary and Supplementary Angles

1. An angle measure is 23° 42' 17". Find the supplement and complement of the angle.

Comp: $66^\circ 17' 43''$

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.



$3x+3=90$

$3x=87$

$x=29$

$29^\circ, 61^\circ$

Set up an equation you *could* solve to determine the angle measure, x. Don't solve!

X

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

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

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

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

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 8 times an angle B and the complement of angle B is 70° more than twice the measure of the supplement of the complement.

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

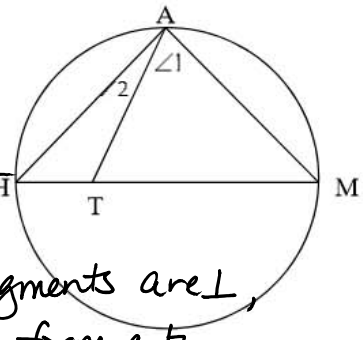
8. Four-fifths of the complement of the angle is 20° less than the supplement of the complement of the angle.

$\frac{4}{5}(90-x) = 180 - (90-x) - 20$

9. The measure of the complement of the supplement of an angle is the difference between a bisected right angle and twice the angle.

$90-(180-x) = 45-2x$

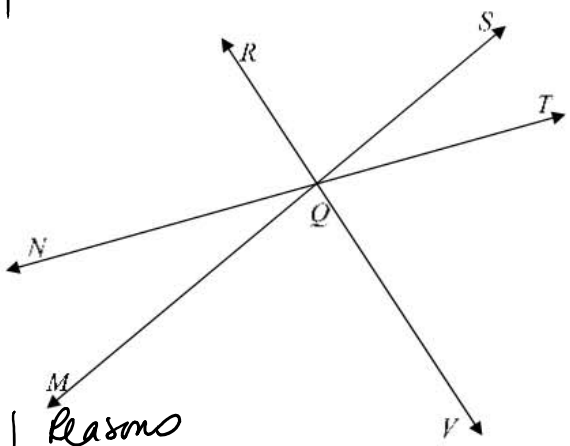
10. Given: $\overline{HA} \perp \overline{AM}$
Prove: $\angle 1$ is complementary to $\angle 2$



1 → ⊾ → comp

Statements	Reasons
1. $\overline{HA} \perp \overline{AM}$	1. Given
2. $\angle HAM$ is a ⊾	2. If two segments are ⊥, then they form a ⊾.
3. $\angle 1$ comp $\angle 2$	3. If two angles form a ⊾, then they are comp.

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



Statements	Reasons
1. Diagram	1. Given
2. $\angle MQS$ is a st. angle	2. Assumed from diagram
3. $\angle MQN$ supp $\angle NQS$	3. If two angles form a straight angle, then they are supp.