Honors Geometry

Practice!

Name Huff

Date

1. The complement of an angle is 16 more than the angle. What's the measure of the angle?

$x + x + 16 = 90$ (comp) $\quad 2x = 74 \quad x = 37$

OR $(90 - x) = x + 16$

2. The complement of an angle is 6 more than twice as big as the angle. What's the measure of the angle?

$x + 2x + 6 = 90$ (comp) $\quad 3x + 6 = 90 \quad 3x = 84 \quad x = 28$

OR $(90 - x) = 2x + 6$

3. An angle is 46° less than its supplement. What are the measures of the 2 angles?

$x + (x + 46) = 180$ (suppl) $\quad 2x + 46 = 180 \quad 2x = 134 \quad x = 67$

$67 + 46 = 113$

OR $x = (180 - x) - 46$

4. An angle is 4 times the measure of its complement. What's the measure of its supplement?

$x + 4x = 90$ (comp) $\quad 5x = 90 \quad x = 18$

So $4 = 4(18) = 72°$

$180 - 72 = 108°$ ← supplement

OR $x = 4(90 - x)$

5. The complement of an angle is 48°. What's the measure of its supplement?

$90 - 48 = 42°$

$180 - 42 = 138°$

6. When ½ the supplement of an angle is added to the complement of the angle, the sum is 120°. What's the measure of the complement?

$\frac{1}{2}(180 - x) + (90 - x) = 120$

$90 - \frac{1}{2}x + 90 - x = 120$

$-1.5x + 180 = 120 \quad -1.5x = -60 \quad x = 40$ the angle

So complement is $90 - 40 = 50°$

7. The complement of 34°46′ angle is bisected. What is the measure of the smaller angles?

$89\ 60 - 34\ 46 = 55°\ 14'$

$55°\ 14' \div 2 = 27.5°\ 07'$ or $27°\ 37'$

8. 3 angles add to 132° and are in the ratio 2:4:5. What are the 3 angles?

$2x + 4x + 5x = 132$

$11x = 132 \quad x = 12$

$2(12) = 24°$

$4(12) = 48°$

$5(12) = 60°$

9. An angle has been bisected, then one of the smaller angles was trisected. One of the smallest angles measures 8°. What was the measure of the original angle?

$8 \times 3 = 24°$

$24 \times 2 = 48°$

10. An 72° angle was trisected, then one of the three pieces was bisected, then one of those 2 was bisected again. Sketch this below and include the measures of each angle.