Honors Geometry   Name _____

Unit 1 – Worksheet 5   Date _____ Period _____

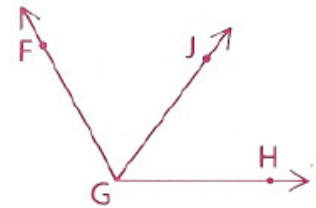**Answer each problem below. Use proper notation, show all work and box in all answers.**

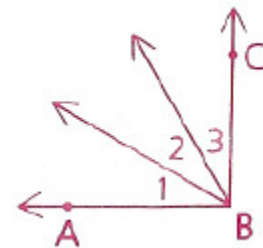1. B and C trisect $\overline{AD}$. Find the coordinates of B and C. Find $\overline{AC}$.

2. Given $OM = x + 8$, $MP = 2x - 6$, and $OP = 44$. Is M the midpoint of $\overline{OP}$? Why or why
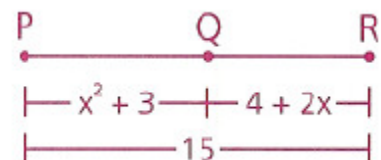
    not?

3. Given $m\angle FGJ = 3x - 5$, $m\angle JGH = x + 27$, and $\overrightarrow{GJ}$ bisects $\angle FGH$. Find $m\angle FGJ$.
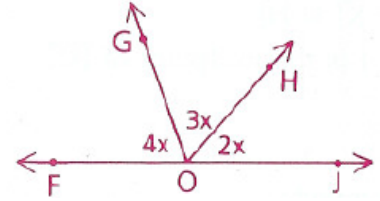

4. Given $m\angle ABC = 90°$, $m\angle 1 = (2x + 10)°$, $m\angle 2 = (x + 20)°$ and $m\angle 3 = (3x)°$. Has $\angle ABC$
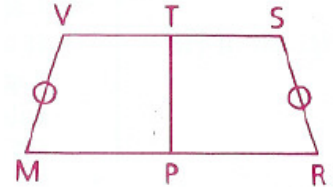
    been trisected? How do you know?

5. Find the value of x. Is Q the midpoint of $\overline{PR}$?

6. $\overrightarrow{OG}$ and $\overrightarrow{OH}$ divide straight angle FOJ into three angles whose measures are in the ratio $4:3:2$. Find $m\angle FOG$.
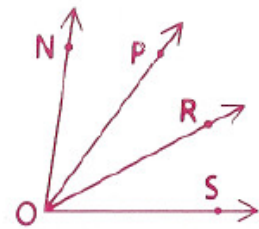

7. Given $\overleftrightarrow{TP}$ bisects $\overline{VS}$ and $\overline{MR}$, $\overline{VM} \cong \overline{SR}$, $MP = 9$, $VT = 6$, and perimeter of $MRSV = 62$. Find VM.

8. The measures of two angles are in the ratio $5:3$. The measure of the larger angle is $30°$ greater than half the difference of the angles. Find the measure of each angle.

9. Given $\overrightarrow{OP}$ and $\overrightarrow{OR}$ trisect $\angle NOS$, $m\angle NOP = 3x - 4y$, $m\angle POR = x - y$, $m\angle ROS = y - 10$. Find $m\angle ROS$.

10. $m\angle BAC = 120°$, and points D, E, and F are in the interior of $\angle BAC$ as shown. $\overrightarrow{AD}$ bisects $\angle BAF$. $\overrightarrow{AE}$ bisects $\angle CAF$. Find $m\angle DAE$