Name: _____

1.3 – Angles & Their Measures

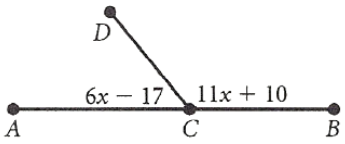
Past due on: _____ Period: _____

ALL WORK MUST BE SHOWN TO RECEIVE CREDIT.

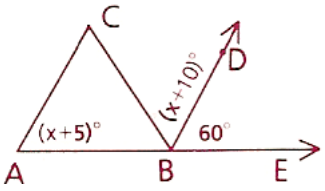
1. The measure of an obtuse angle is $5y + 45$. What are the restrictions on y?

2. The measure of an acute angle is $2x + 14$. What are the restrictions on x?

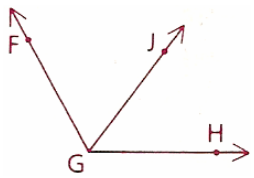
3. Use the Angle Addition Postulate to find the value of x and $m\angle ACD$.



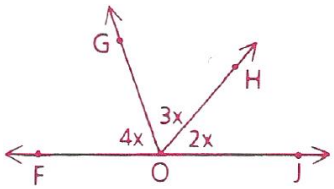
4. If $\angle CBD \cong \angle DBE$, find $m\angle A$.



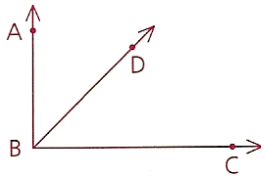
5. Given: $m\angle FGJ = 3x - 5$, $m\angle JGH = x + 27$, and $\overrightarrow{GJ}$ bisects $\angle FGH$. Set up and solve an equation to find the value of x and $m\angle FGH$.



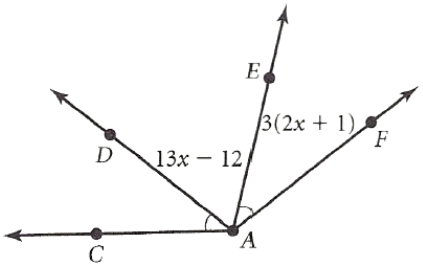
6. $\overrightarrow{OG}$ and $\overrightarrow{OH}$ divide $\angle FOJ$ into three angles whose measures are in the ratio 4:3:2. Find $m\angle FOG$.



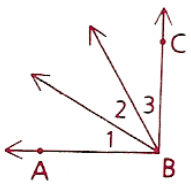
7. Given: $\angle ABC$ is a right angle; $m\angle ABD = 3x + 4$ and $m\angle DBC = x + 6$. Use the Angle Addition Postulate to find the value of x, $m\angle ABD$, and $m\angle DBC$.



8. In the figure shown below, $m\angle DAF = 18x - 3$. Use the Angle Addition Postulate to find the value of x, $m\angle DAC$, $m\angle DAE$, and $m\angle CAF$.

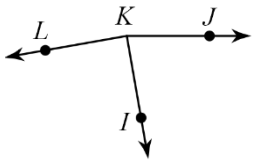


9. Given: $m\angle ABC = 90°$, $m\angle 1 = 2x + 10$, $m\angle 2 = 3x$ and $m\angle 3 = x + 20$. Has $\angle ABC$ been trisected? Explain your reasoning.

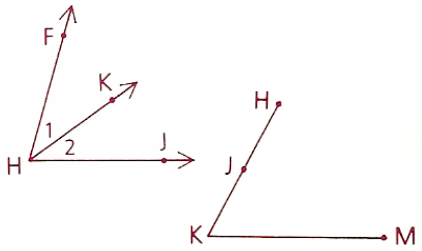


10. The measure of $\angle A$ is 6 greater than twice the measure of $\angle B$. If the angles' sum is 42°, find the measure of each angle.

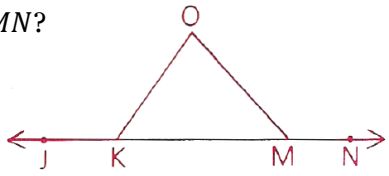
11. Given: $\angle LKI \cong \angle JKI$. If $m\angle LKI = 1.5x + 2$ and $m\angle JKI = 2x - 29.25$ is $\angle LKJ$ a straight angle? Explain your reasoning.



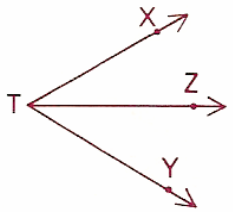
12. Given: $m\angle 1 = x + 7$, $m\angle 2 = 2x - 3$, $m\angle FHJ = x^2$, and $m\angle K = 5x - 4$. Is $\angle FHJ \cong \angle K$? Explain your reasoning.



13. Given: $m\angle OMK = 50°$, $m\angle OKM = 2x$, $m\angle OKJ = 5x + 5$. Is $\angle OKJ \cong \angle OMN$? Explain your reasoning.



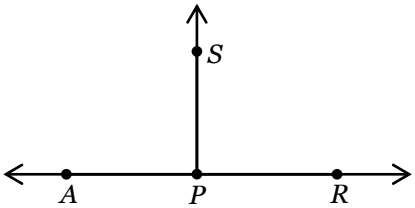
14. Given: $\overrightarrow{TZ}$ bisects $\angle XTY$, $m\angle XTZ = 10 - 3x$, and $m\angle ZTY = x^2 - 6x$. Find the value of x and $m\angle XTY$.



EXTRA CREDIT:

Please show all work on a separate sheet of paper.

15. $\angle APR$ is a straight angle and $\angle APS$ is a right angle. $m\angle APR = 2x + 5y$ and $m\angle SPR = 3x + 3y$. Set up and solve a system of equations to find the values of x and y.



16. In the diagram shown, $m\angle 1 = 2x + 40$, $m\angle 2 = 2y + 40$, and $m\angle 3 = x + 2y$. Set up and solve a system of equations to find the values of x and y. Then find $m\angle 1$, $m\angle 2$, and $m\angle 3$.