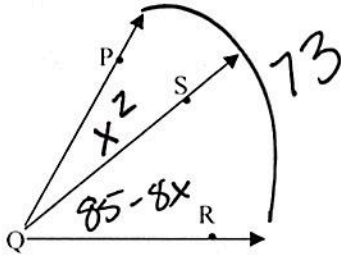


1. If $m\angle PQR = 73$ and $m\angle PQS = x^2$, and $m\angle SQR = 85 - 8x$, find $m\angle SQR$.



$$x^2 + 85 - 8x = 73$$

$$x^2 - 8x + 12 = 0$$

$$(x-6)(x-2) = 0$$

$$x=6, x=2$$

$$m\angle SQR = 37^\circ + 69^\circ$$

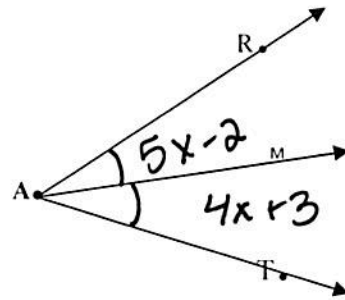
2. If $m\angle RAM = 5x - 2$ and $m\angle MAT = 4x + 3$, find $m\angle RAT$.
 \overline{AM} bisects $\angle RAT$.

$$5x - 2 = 4x + 3$$

$$x = 5$$

$$5(5) - 2 = 23$$

$$x^2 = 46^\circ$$



3. $\overline{RS} \perp \overline{PT}$, $m\angle PSQ = (3x+8y)^\circ$, $m\angle QSR = (9x+y)^\circ$ and $m\angle TSU = (5x+2y)^\circ$. Find x and y .

$$3x + 8y = 5x + 2y$$

$$-2x - 2y = -3x - 2y$$

$$\frac{6y}{2} = \frac{2x}{2}$$

$$3y = x$$

$$x = 6$$

$$3x + 8y + 9x + y = 90$$

$$\frac{12x}{3} + \frac{9y}{3} = \frac{90}{3}$$

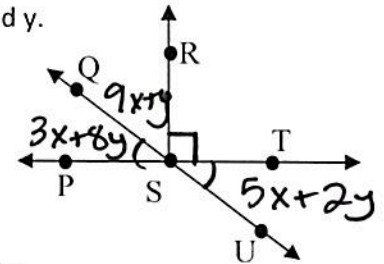
$$4x + 3y = 30$$

$$4(3y) + 3y = 30$$

$$12y + 3y = 30$$

$$15y = 30$$

$$y = 2$$



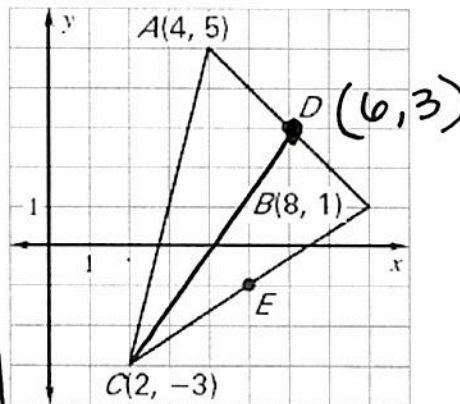
4. Find the length of the median \overline{CD}

$$d = \sqrt{(6-2)^2 + (3+3)^2}$$

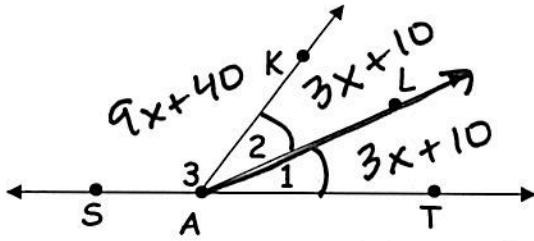
$$\sqrt{4^2 + 6^2}$$

$$\sqrt{16 + 36} = \sqrt{52}$$

$$= 7.211$$



5. \overline{AL} bisects $\angle KAT$, $m\angle 2 = 3x+10$, $m\angle 3 = 9x+40$. Find x . $x =$ _____



$$9x+40 + 3x+10 + 3x+10 = 180$$

$$15x + 60 = 180$$

$$15x = 120$$

$$\boxed{x = 8}$$

6. Determine the CONVERSE of the following if-then statement.

"If three points are noncollinear, then they form a triangle."

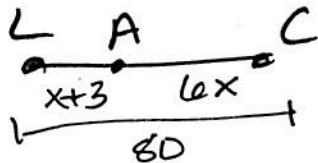
- A. Three points are noncollinear if and only if they form a triangle.
 B. If three points are not noncollinear, then they do not form a triangle.
 C. If three points form a triangle, then they are noncollinear.
 D. If three points do not form a triangle, then they are not noncollinear.

7. Give a counterexample to disprove the following statement:

"If a number is divisible by 5, then it is divisible by 10"

25, 5, 15, etc...

8. Point A is between points L and C on \overline{LC} . If $LA = x + 3$ and $AC = 6x$, and $LC = 80$, then $x =$ _____



$$x+3 + 6x = 80$$

$$7x + 3 = 80$$

$$7x = 77$$

$$\boxed{x = 11}$$

9. Find x .

$$2x - 34 = x + 7$$

$$+34 \quad +34$$

$$\boxed{x = 41}$$

