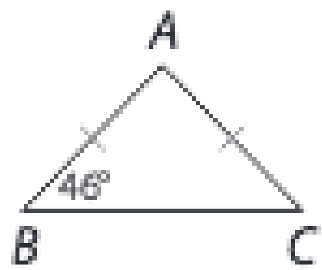
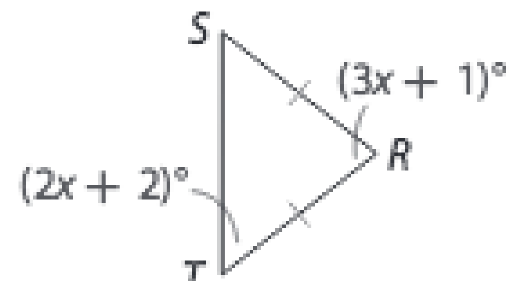
Homework
pg. 1104-1108 (4-9, 19, 20)

4. m∠A



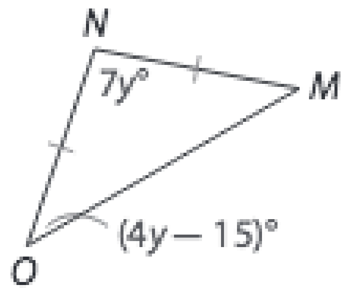
$m\angle A = 88°$

5. m∠R



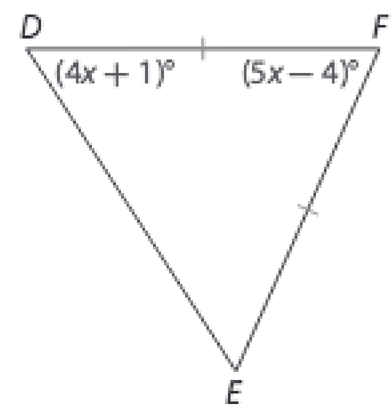
$m\angle R = (3x+1)° = (3(25)+1)° = (75+1)° = 76°$

6. m∠O



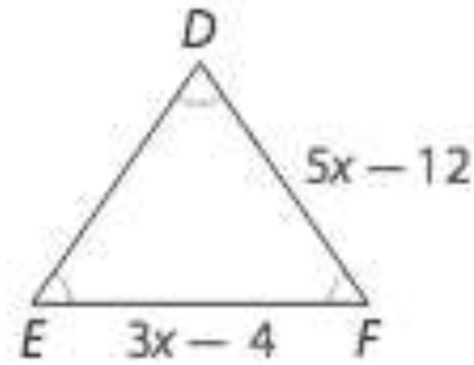
$m\angle O = (4y-15)° = (4(14)-15)° = (56-15)° = 41°$

7. m∠E



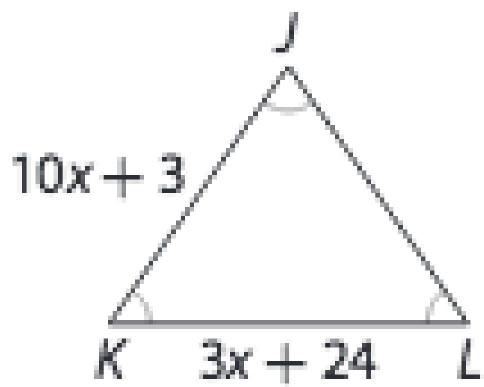
$m\angle E = (4x+1)° = (4(14)+1)° = (56+1)° = 57°$

8. $\overline{DE}$



$DE = 8$

9. $\overline{KL}$

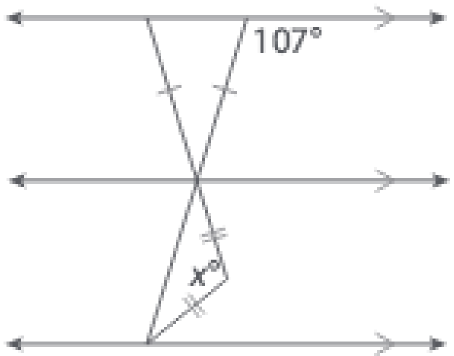


$KL = 33$

12. Given $\triangle JKL$ with $m\angle J = 63°$ and $m\angle L = 54°$, is the triangle an acute, isosceles, obtuse, or right triangle?

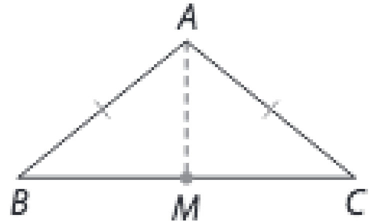
By the Triangle Sum Theorem, $m\angle K = 63°$, so the triangle is an acute isosceles triangle because all angle measures are less than 90°.

13. Find x. Explain your reasoning. The horizontal lines are parallel.



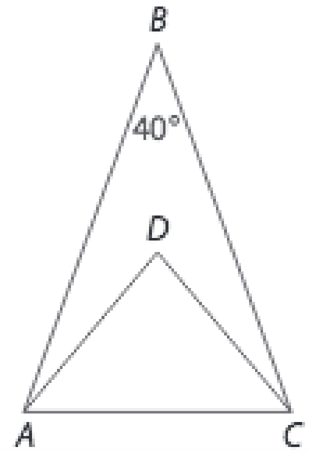
By the def. supp. ∠, the base angles of the top triangle have a measure of 73°. Therefore, the measure of the vertex angle is 34° by the Triangle Sum Theorem. The base angles of the bottom isosceles triangle will also measure 34° by the Vertical Angles Theorem. Thus, $x°$ will equal 112° by the Triangle Sum Theorem.

19. **Critical Thinking** Prove $\angle B \cong \angle C$, given point M is the midpoint of $\overline{BC}$.



Statements	Reasons
1. M is the midpoint of $\overline{BC}$.	1. Given
2. $\overline{BM} \cong \overline{CM}$	2. Definition of midpoint
3. $\overline{AB} \cong \overline{AC}$	3. Given
4. $\overline{AM} \cong \overline{AM}$	4. Reflexive Property of Congruence
5. $\triangle AMB \cong \triangle AMC$	5. SSS Triangle Congruence Theorem
6. $\angle B \cong \angle C$	6. CPCTC

20. Given that $\triangle ABC$ is an isosceles triangle and $\overline{AD}$ and $\overline{CD}$ are angle bisectors, what is $m\angle ADC$?



$m\angle BAC = m\angle BCA = 70°$, so $m\angle DAC = m\angle DCA = 35°$. Then, $m\angle ADC = 180° - (35° + 35°) = 110°$.