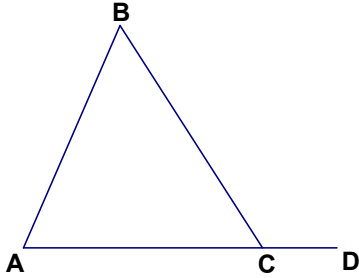


Name \_\_\_\_\_  
Mr. Schlansky

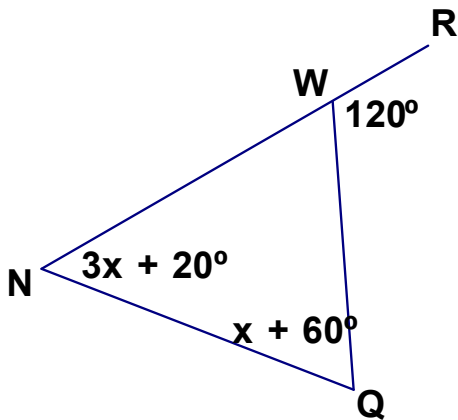
Date \_\_\_\_\_  
Geometry

## *Exterior Angle Theorem*

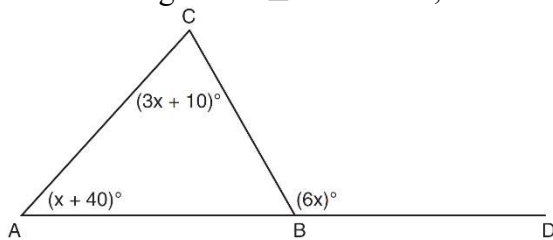
1. If  $m\angle BCD = 110^\circ$  and  $m\angle ABC = 40^\circ$ , find  $m\angle BAC$



2. Find the measure of  $\angle QNW$  below



3. In the diagram of  $\triangle ABC$  below,  $\overline{AB}$  is extended to point  $D$ .

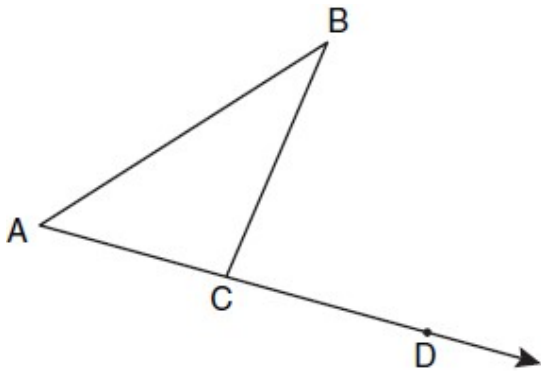


If  $m\angle CAB = x + 40$ ,  $m\angle ACB = 3x + 10$ ,  $m\angle CBD = 6x$ , what is  $m\angle CAB$ ?

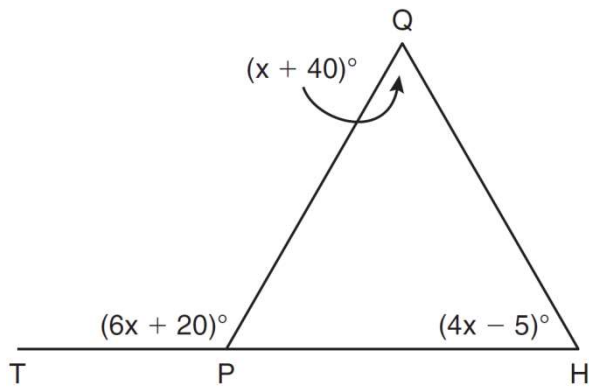
- 1) 13
- 2) 25
- 3) 53
- 4) 65

4. In the diagram below,  $\triangle ABC$  is shown with  $\overline{AC}$  extended through point  $D$ .

If  $m\angle BCD = 6x + 2$ ,  $m\angle BAC = 3x + 15$ , and  $m\angle ABC = 2x - 1$ , what is the value of  $x$ ?



5. In the diagram below of  $\triangle HQP$ , side  $\overline{HP}$  is extended through  $P$  to  $T$ ,  $m\angle QPT = 6x + 20$ ,  $m\angle HQP = x + 40$ , and  $m\angle PHQ = 4x - 5$ . Find  $m\angle QPT$ .



(Not drawn to scale)

6. In the diagram below of triangle  $ABC$ ,  $\overline{AC}$  is extended through point  $C$  to point  $D$ , and  $\overline{BE}$  is drawn to  $\overline{AC}$ .

Which equation is always true?

- 1)  $m\angle 1 = m\angle 3 + m\angle 2$
- 2)  $m\angle 5 = m\angle 3 - m\angle 2$
- 3)  $m\angle 6 = m\angle 3 - m\angle 2$
- 4)  $m\angle 7 = m\angle 3 + m\angle 2$

