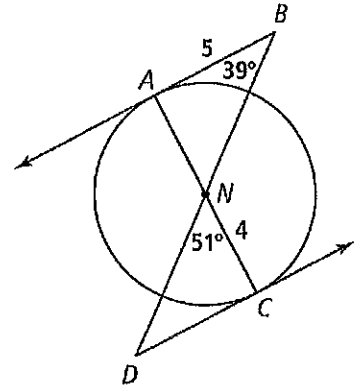
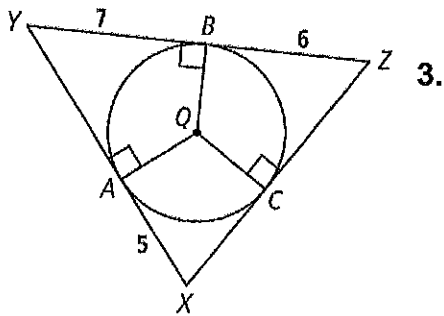
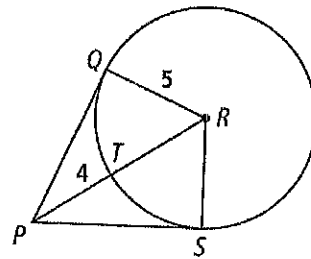


1. Given  $\overline{DC}$  is tangent to  $\odot N$  at point  $C$ , is each statement true for  $\odot N$ ?

	Yes	No
$m\angle DCN < m\angle BAN$	<input type="checkbox"/>	<input type="checkbox"/>
$\overline{BA}$ is tangent to circle $N$ at point $A$ .	<input type="checkbox"/>	<input type="checkbox"/>
$NB \approx 6.4$	<input type="checkbox"/>	<input type="checkbox"/>

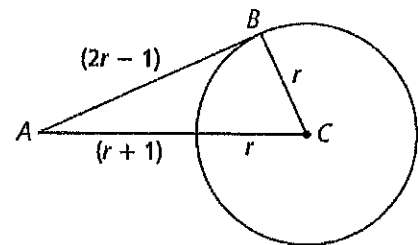


2. If  $\overline{PQ}$  is tangent to circle  $R$  at point  $Q$  and  $\overline{PS}$  is tangent to  $\odot R$  at point  $S$ , what is the perimeter of quadrilateral  $PQRS$ ?

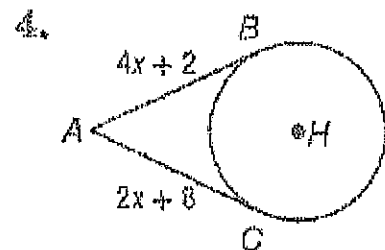
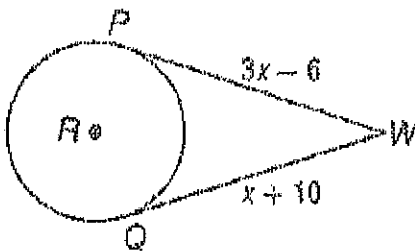


3. What is the perimeter of  $\triangle XYZ$ ?

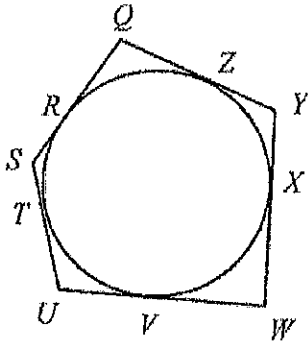
4. Given  $\overline{AB}$  is tangent to  $\odot C$  at point  $B$ , what is the circumference of  $\odot C$ ?



Find the value of  $x$ :



The circle is circumscribed by the pentagon as shown (not drawn to scale). If  $QZ = 12$ ,  $YX = 6$ ,  $XW = 11$ ,  $UW = 17$ , and  $SU = 11$ , find the perimeter of the pentagon.



$\overline{AB}$  is tangent to  $\odot O$  at  $A$  (not drawn to scale). Find the length of the radius.

