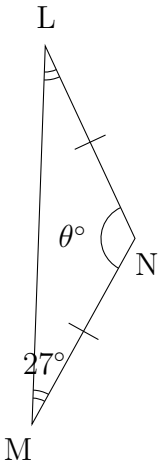
Name: _____ **Date:** _____

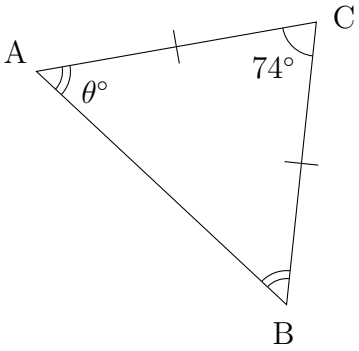
Angles in a Triangle: Answers

(1)



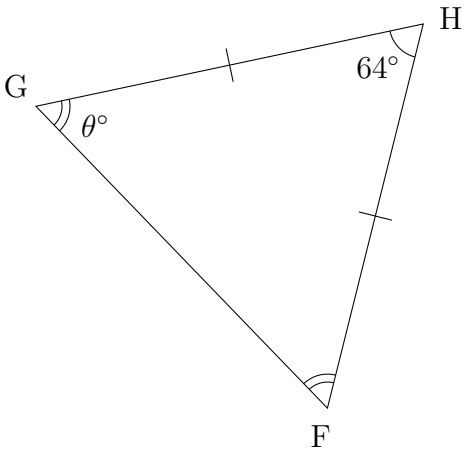
$$\begin{aligned}\theta^\circ &= 180^\circ - (\angle \mathrm{L} + \angle \mathrm{M}) \\ &= 180^\circ - (27^\circ + 27^\circ) \\ &= 180^\circ - 54^\circ \\ &= 126^\circ\end{aligned}$$

(2)



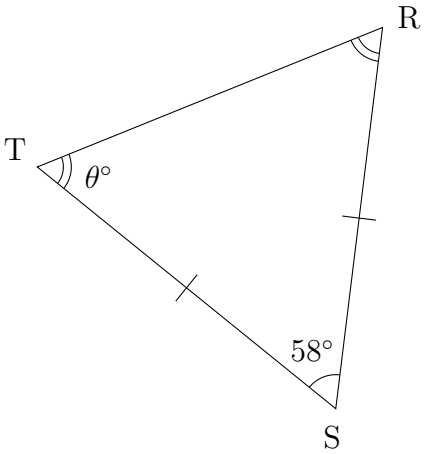
$$\begin{aligned}\theta^\circ &= \frac{(180^\circ - \angle \mathrm{C})}{2} \\ &= \frac{(180^\circ - 74^\circ)}{2} \\ &= \frac{106^\circ}{2} \\ &= 53^\circ\end{aligned}$$

(3)



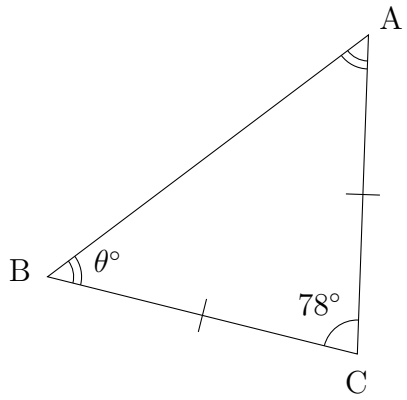
$$\begin{aligned}\theta^\circ &= \frac{(180^\circ - \angle \mathrm{H})}{2} \\ &= \frac{(180^\circ - 64^\circ)}{2} \\ &= \frac{116^\circ}{2} \\ &= 58^\circ\end{aligned}$$

(4)



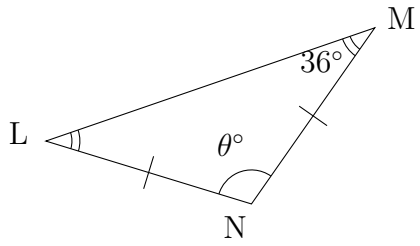
$$\begin{aligned}\theta^\circ &= \frac{(180^\circ - \angle \mathrm{S})}{2} \\ &= \frac{(180^\circ - 58^\circ)}{2} \\ &= \frac{122^\circ}{2} \\ &= 61^\circ\end{aligned}$$

(5)



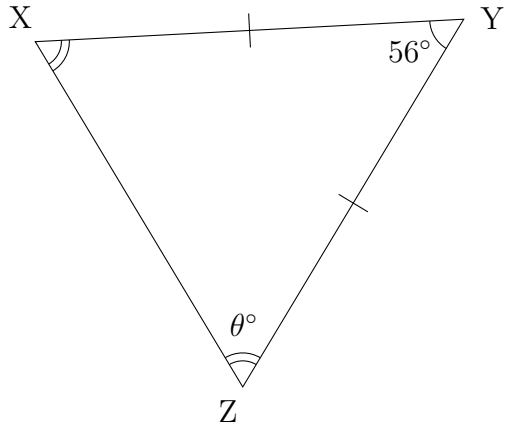
$$\begin{aligned}\theta^\circ &= \frac{(180^\circ - \angle\mathrm{C})}{2} \\ &= \frac{(180^\circ - 78^\circ)}{2} \\ &= \frac{102^\circ}{2} \\ &= 51^\circ\end{aligned}$$

(6)



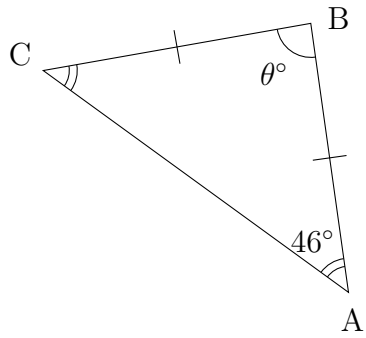
$$\begin{aligned}\theta^\circ &= 180^\circ - (\angle\mathrm{M} + \angle\mathrm{L}) \\ &= 180^\circ - (36^\circ + 36^\circ) \\ &= 180^\circ - 72^\circ \\ &= 108^\circ\end{aligned}$$

(7)



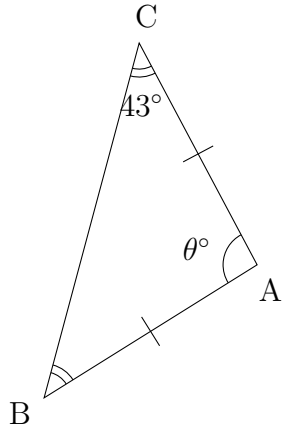
$$\begin{aligned}\theta^\circ &= \frac{(180^\circ - \angle\mathrm{Y})}{2} \\ &= \frac{(180^\circ - 56^\circ)}{2} \\ &= \frac{124^\circ}{2} \\ &= 62^\circ\end{aligned}$$

(8)



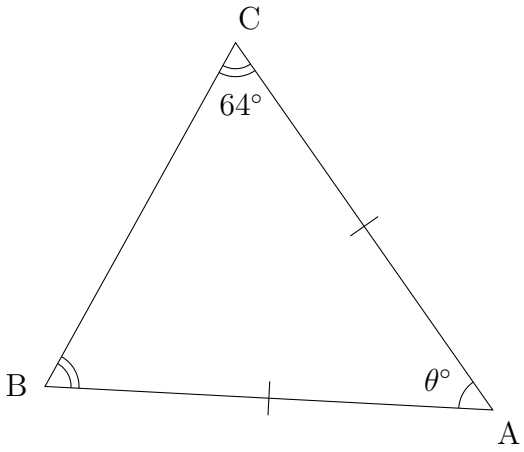
$$\begin{aligned}\theta^\circ &= 180^\circ - (\angle\mathrm{C} + \angle\mathrm{A}) \\ &= 180^\circ - (46^\circ + 46^\circ) \\ &= 180^\circ - 92^\circ \\ &= 88^\circ\end{aligned}$$

(9)



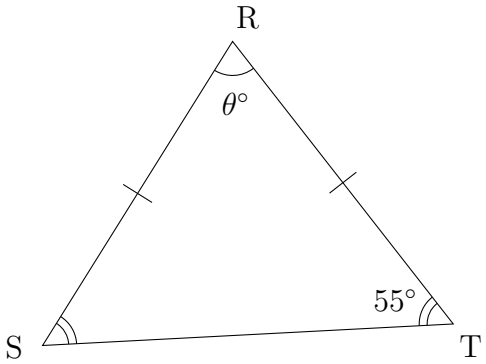
$$\begin{aligned}\theta^\circ &= 180^\circ - (\angle\mathrm{C} + \angle\mathrm{B}) \\ &= 180^\circ - (43^\circ + 43^\circ) \\ &= 180^\circ - 86^\circ \\ &= 94^\circ\end{aligned}$$

(10)



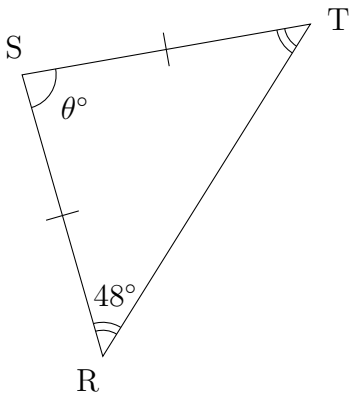
$$\begin{aligned}\theta^\circ &= 180^\circ - (\angle \mathrm{C} + \angle \mathrm{B}) \\ &= 180^\circ - (64^\circ + 64^\circ) \\ &= 180^\circ - 128^\circ \\ &= 52^\circ\end{aligned}$$

(11)



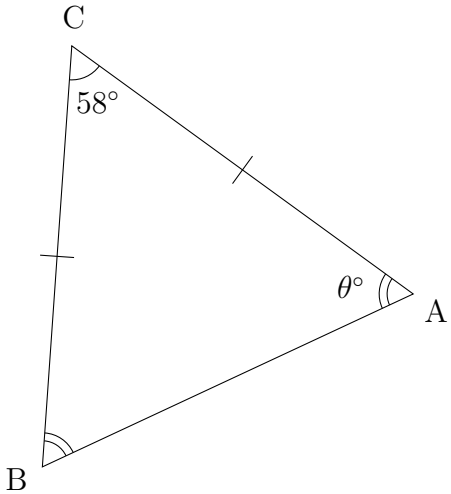
$$\begin{aligned}\theta^\circ &= 180^\circ - (\angle \mathrm{S} + \angle \mathrm{T}) \\ &= 180^\circ - (55^\circ + 55^\circ) \\ &= 180^\circ - 110^\circ \\ &= 70^\circ\end{aligned}$$

(12)



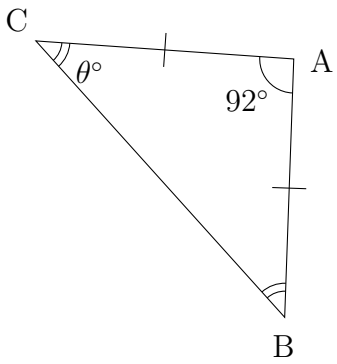
$$\begin{aligned}\theta^\circ &= 180^\circ - (\angle \mathrm{R} + \angle \mathrm{T}) \\ &= 180^\circ - (48^\circ + 48^\circ) \\ &= 180^\circ - 96^\circ \\ &= 84^\circ\end{aligned}$$

(13)



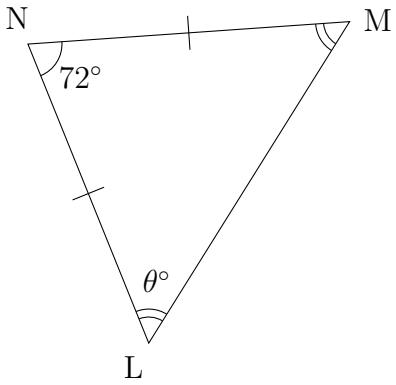
$$\begin{aligned}\theta^\circ &= \frac{(180^\circ - \angle \mathrm{C})}{2} \\ &= \frac{(180^\circ - 58^\circ)}{2} \\ &= \frac{122^\circ}{2} \\ &= 61^\circ\end{aligned}$$

(14)



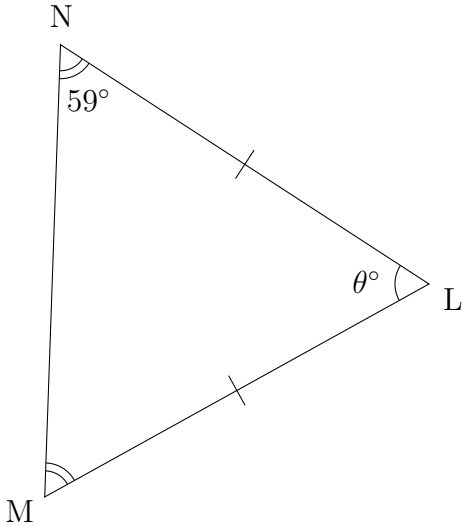
$$\begin{aligned}\theta^\circ &= \frac{(180^\circ - \angle\mathrm{A})}{2} \\ &= \frac{(180^\circ - 92^\circ)}{2} \\ &= \frac{88^\circ}{2} \\ &= 44^\circ\end{aligned}$$

(15)



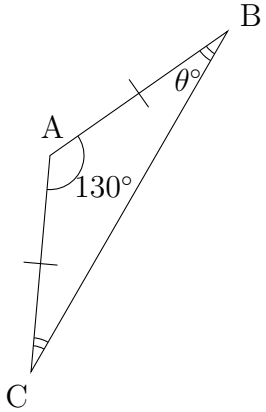
$$\begin{aligned}\theta^\circ &= \frac{(180^\circ - \angle\mathrm{N})}{2} \\ &= \frac{(180^\circ - 72^\circ)}{2} \\ &= \frac{108^\circ}{2} \\ &= 54^\circ\end{aligned}$$

(16)



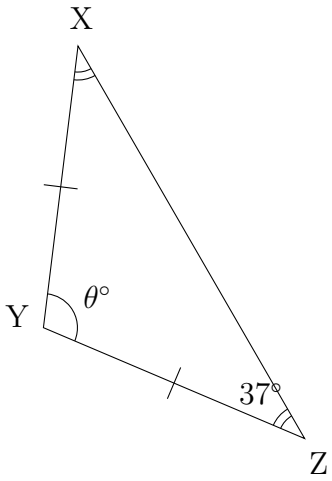
$$\begin{aligned}\theta^\circ &= 180^\circ - (\angle\mathrm{N} + \angle\mathrm{M}) \\ &= 180^\circ - (59^\circ + 59^\circ) \\ &= 180^\circ - 118^\circ \\ &= 62^\circ\end{aligned}$$

(17)



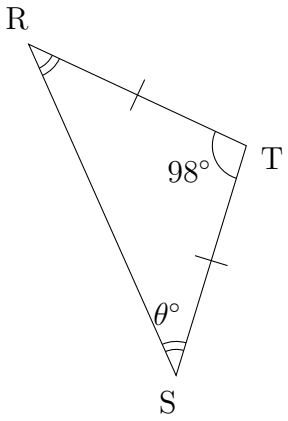
$$\begin{aligned}\theta^\circ &= \frac{(180^\circ - \angle\mathrm{A})}{2} \\ &= \frac{(180^\circ - 130^\circ)}{2} \\ &= \frac{50^\circ}{2} \\ &= 25^\circ\end{aligned}$$

(18)



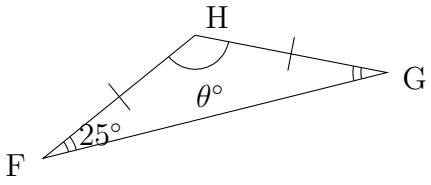
$$\begin{aligned}\theta^\circ &= 180^\circ - (\angle \mathrm{Z} + \angle \mathrm{X}) \\ &= 180^\circ - (37^\circ + 37^\circ) \\ &= 180^\circ - 74^\circ \\ &= 106^\circ\end{aligned}$$

(19)



$$\begin{aligned}\theta^\circ &= \frac{(180^\circ - \angle \mathrm{T})}{2} \\ &= \frac{(180^\circ - 98^\circ)}{2} \\ &= \frac{82^\circ}{2} \\ &= 41^\circ\end{aligned}$$

(20)



$$\begin{aligned}\theta^\circ &= 180^\circ - (\angle \mathrm{F} + \angle \mathrm{G}) \\ &= 180^\circ - (25^\circ + 25^\circ) \\ &= 180^\circ - 50^\circ \\ &= 130^\circ\end{aligned}$$