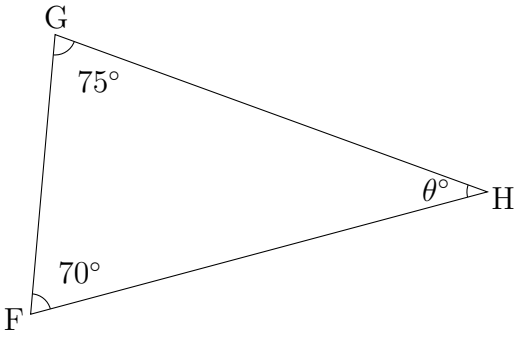
**Name:** _____ **Date:** _____

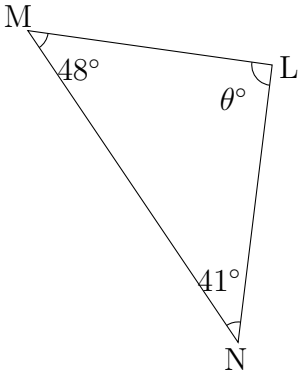
Angles in a Triangle: Answers

(1)



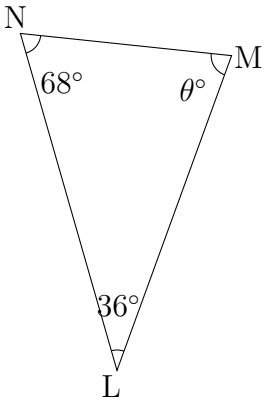

$$\begin{aligned}\theta^\circ &= 180^\circ - (\angle \mathrm{G} + \angle \mathrm{F}) \\ &= 180^\circ - (75^\circ + 70^\circ) \\ &= 180^\circ - 145^\circ \\ &= 35^\circ\end{aligned}$$

(2)



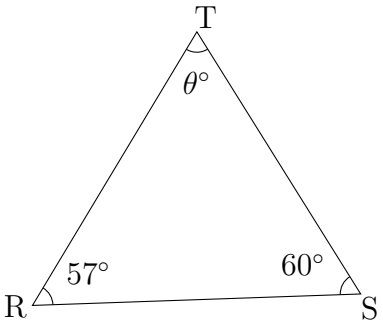

$$\begin{aligned}\theta^\circ &= 180^\circ - (\angle \mathrm{M} + \angle \mathrm{N}) \\ &= 180^\circ - (48^\circ + 41^\circ) \\ &= 180^\circ - 89^\circ \\ &= 91^\circ\end{aligned}$$

(3)



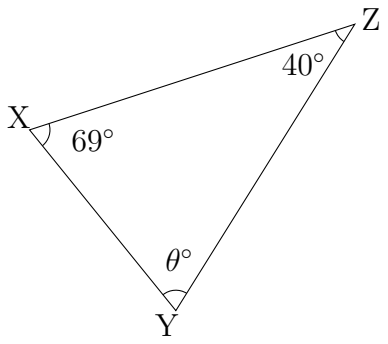

$$\begin{aligned}\theta^\circ &= 180^\circ - (\angle \mathrm{N} + \angle \mathrm{L}) \\ &= 180^\circ - (68^\circ + 36^\circ) \\ &= 180^\circ - 104^\circ \\ &= 76^\circ\end{aligned}$$

(4)



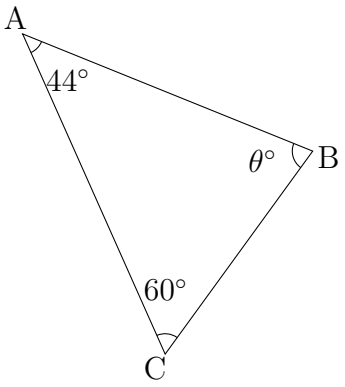

$$\begin{aligned}\theta^\circ &= 180^\circ - (\angle \mathrm{R} + \angle \mathrm{S}) \\ &= 180^\circ - (57^\circ + 60^\circ) \\ &= 180^\circ - 117^\circ \\ &= 63^\circ\end{aligned}$$

(5)



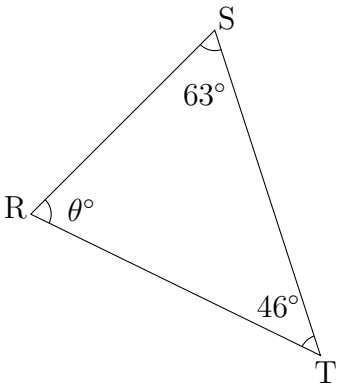

$$\begin{aligned}\theta^\circ &= 180^\circ - (\angle \mathrm{Z} + \angle \mathrm{X}) \\ &= 180^\circ - (40^\circ + 69^\circ) \\ &= 180^\circ - 109^\circ \\ &= 71^\circ\end{aligned}$$

(6)



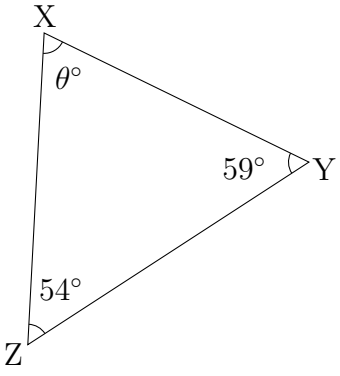

$$\begin{aligned}\theta^\circ &= 180^\circ - (\angle \mathrm{A} + \angle \mathrm{C}) \\ &= 180^\circ - (44^\circ + 60^\circ) \\ &= 180^\circ - 104^\circ \\ &= 76^\circ\end{aligned}$$

(7)



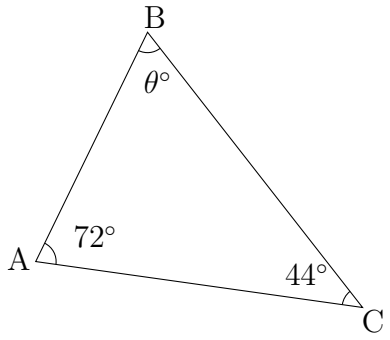

$$\begin{aligned}\theta^\circ &= 180^\circ - (\angle \mathrm{T} + \angle \mathrm{S}) \\ &= 180^\circ - (46^\circ + 63^\circ) \\ &= 180^\circ - 109^\circ \\ &= 71^\circ\end{aligned}$$

(8)



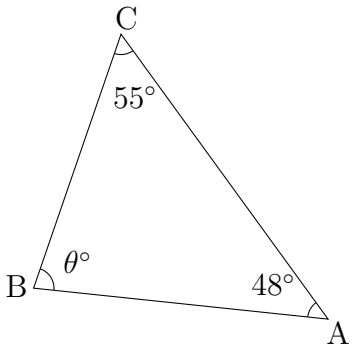

$$\begin{aligned}\theta^\circ &= 180^\circ - (\angle \mathrm{Z} + \angle \mathrm{Y}) \\ &= 180^\circ - (54^\circ + 59^\circ) \\ &= 180^\circ - 113^\circ \\ &= 67^\circ\end{aligned}$$

(9)



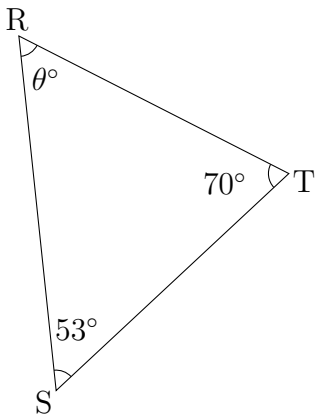

$$\begin{aligned}\theta^\circ &= 180^\circ - (\angle\mathrm{A} + \angle\mathrm{C}) \\ &= 180^\circ - (72^\circ + 44^\circ) \\ &= 180^\circ - 116^\circ \\ &= 64^\circ\end{aligned}$$

(10)



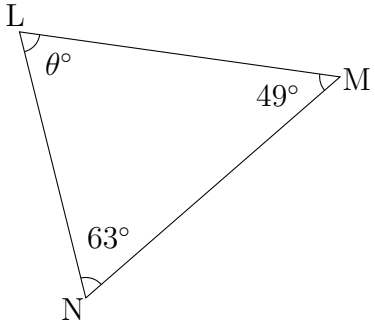

$$\begin{aligned}\theta^\circ &= 180^\circ - (\angle\mathrm{A} + \angle\mathrm{C}) \\ &= 180^\circ - (48^\circ + 55^\circ) \\ &= 180^\circ - 103^\circ \\ &= 77^\circ\end{aligned}$$

(11)



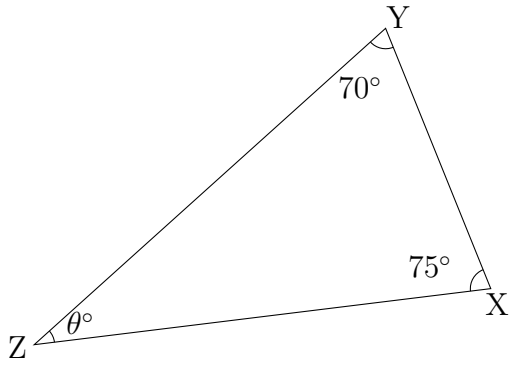

$$\begin{aligned}\theta^\circ &= 180^\circ - (\angle\mathrm{S} + \angle\mathrm{T}) \\ &= 180^\circ - (53^\circ + 70^\circ) \\ &= 180^\circ - 123^\circ \\ &= 57^\circ\end{aligned}$$

(12)



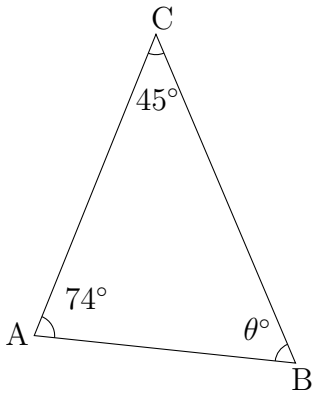

$$\begin{aligned}\theta^\circ &= 180^\circ - (\angle\mathrm{N} + \angle\mathrm{M}) \\ &= 180^\circ - (63^\circ + 49^\circ) \\ &= 180^\circ - 112^\circ \\ &= 68^\circ\end{aligned}$$

(13)



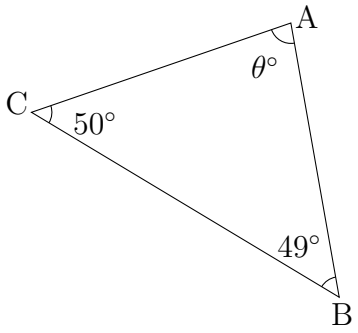

$$\begin{aligned}\theta^\circ &= 180^\circ - (\angle \mathrm{X} + \angle \mathrm{Y}) \\ &= 180^\circ - (75^\circ + 70^\circ) \\ &= 180^\circ - 145^\circ \\ &= 35^\circ\end{aligned}$$

(14)



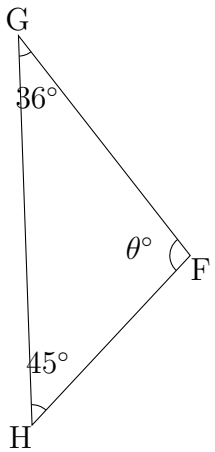

$$\begin{aligned}\theta^\circ &= 180^\circ - (\angle \mathrm{C} + \angle \mathrm{A}) \\ &= 180^\circ - (45^\circ + 74^\circ) \\ &= 180^\circ - 119^\circ \\ &= 61^\circ\end{aligned}$$

(15)



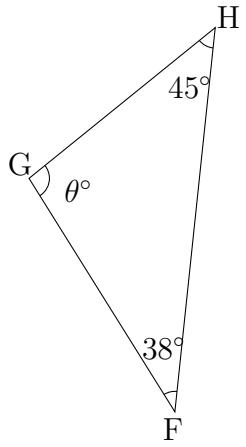

$$\begin{aligned}\theta^\circ &= 180^\circ - (\angle \mathrm{C} + \angle \mathrm{B}) \\ &= 180^\circ - (50^\circ + 49^\circ) \\ &= 180^\circ - 99^\circ \\ &= 81^\circ\end{aligned}$$

(16)



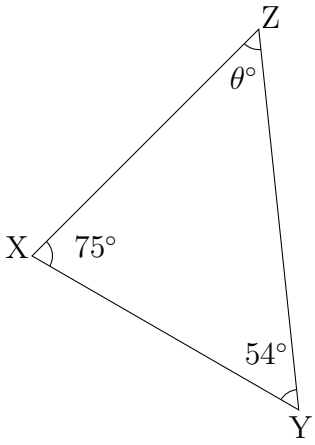

$$\begin{aligned}\theta^\circ &= 180^\circ - (\angle \mathrm{G} + \angle \mathrm{H}) \\ &= 180^\circ - (36^\circ + 45^\circ) \\ &= 180^\circ - 81^\circ \\ &= 99^\circ\end{aligned}$$

(17)



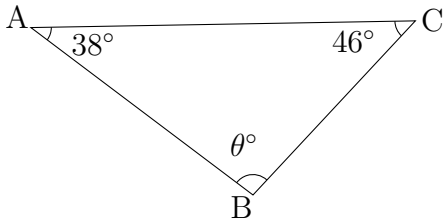

$$\begin{aligned}\theta^\circ &= 180^\circ - (\angle \mathrm{F} + \angle \mathrm{H}) \\ &= 180^\circ - (38^\circ + 45^\circ) \\ &= 180^\circ - 83^\circ \\ &= 97^\circ\end{aligned}$$

(18)



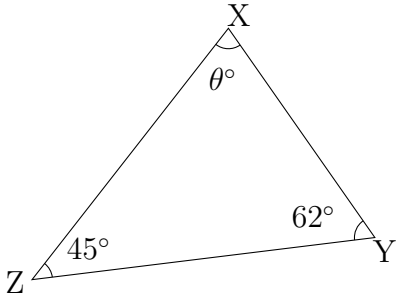

$$\begin{aligned}\theta^\circ &= 180^\circ - (\angle \mathrm{X} + \angle \mathrm{Y}) \\ &= 180^\circ - (75^\circ + 54^\circ) \\ &= 180^\circ - 129^\circ \\ &= 51^\circ\end{aligned}$$

(19)




$$\begin{aligned}\theta^\circ &= 180^\circ - (\angle \mathrm{C} + \angle \mathrm{A}) \\ &= 180^\circ - (46^\circ + 38^\circ) \\ &= 180^\circ - 84^\circ \\ &= 96^\circ\end{aligned}$$

(20)




$$\begin{aligned}\theta^\circ &= 180^\circ - (\angle \mathrm{Z} + \angle \mathrm{Y}) \\ &= 180^\circ - (45^\circ + 62^\circ) \\ &= 180^\circ - 107^\circ \\ &= 73^\circ\end{aligned}$$