



GJ bisects $\angle FGH$, $m\angle FGJ = (7x - 9)^\circ$, and $m\angle HGJ = (2x + 36)^\circ$. What is $m\angle FGH$?

Solution.

Because GJ bisects $\angle FGH$ then

$$\angle FGJ = \angle JGH,$$

$$7x - 9 = 2x + 36,$$

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$$5x = 45,$$

$$x = 9^\circ.$$

And at last we have

$$\angle FGH = \angle FGJ + \angle JGH,$$

$$\angle FGH = 7x - 9 + 2x + 36,$$

$$\angle FGH = 9x + 27,$$

$$\angle FGH = 9 \cdot 9^\circ + 27,$$

$$\angle FGH = 108^\circ.$$

Answer: $\angle FGH = 108^\circ$.