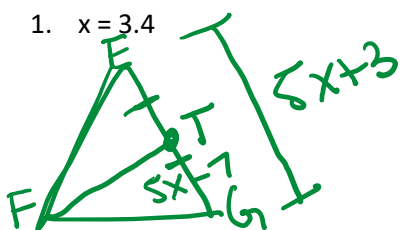


See the answers to the Homework BELOW.

1. FT is a median of triangle FEG. Find x if $EG = 5x + 3$ and $TG = 5x - 7$.
2. HW is a median of triangle FGH. Find x if $GF = 4x$ and $WF = 3x - 3$.
3. XP is an angle bisector of triangle WXV. $\angle VXP = 19x$ and $\angle VXW = 37x + 2$. Find x .
4. SP is an angle bisector of triangle STU. $\angle PSU = 2x + 10$ and $\angle TSP = 3x$. Find x .
5. AD is an altitude of triangle ABC. $BD = 2x$, $DC = 3x - 4$, and $\angle ADC = 4x + 10$. Find BC.

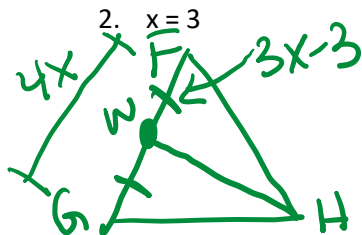
Answers:

1. $x = 3.4$



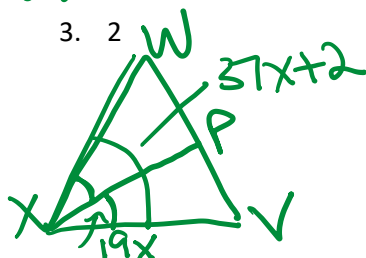
$$\begin{aligned} EG &= 2(TG) \\ 5x+3 &= 2(5x-7) \\ 5x+3 &= 10x-14 \\ -5x & \quad -5x \\ 3 &= 5x-14 \\ & \quad +14 \\ & \quad +14 \\ 17 &= 5x \\ \frac{17}{5} &= \frac{5x}{5} \\ \boxed{x = 3.4} \end{aligned}$$

2. $x = 3$



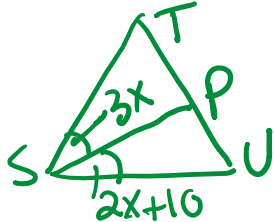
$$\begin{aligned} GF &= 2(WF) \\ 4x &= 2(3x-3) \\ 4x &= 6x-6 \\ -4x & \quad -4x \\ 0 &= 2x-6 \\ & \quad +6 \\ \frac{6}{2} &= \frac{2x}{2} \\ \boxed{x = 3} \end{aligned}$$

3. 2



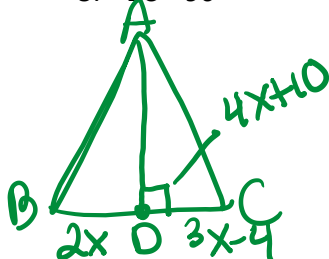
$$\begin{aligned} m\angle VXW &= 2(m\angle VXP) \\ 37x+2 &= 2(19x) \\ 37x+2 &= 38x \\ -37x & \quad -37x \\ 2 &= x \\ \boxed{x = 2} \end{aligned}$$

4. 10



$$\begin{aligned} m\angle TSP &= m\angle PSU \\ 3x &= 2x+10 \\ -2x & \quad -2x \\ \boxed{x = 10} \end{aligned}$$

5. $BC = 96$



$$\begin{aligned} 4x+10 &= 90 \\ -10 & \quad -10 \\ 4x &= 80 \\ \frac{4x}{4} &= \frac{80}{4} \\ x &= 20 \end{aligned}$$

$x = 20$

$$\begin{aligned} BC &= 2(20) = 40 \\ DC &= 3(20) - 4 = 60 - 4 = 56 \\ BD + DC &= BC \\ 40 + 56 &= BC \\ \boxed{96 = BC} \end{aligned}$$