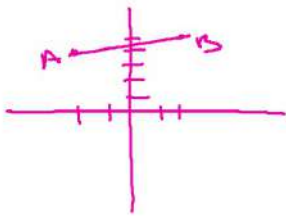


Write the equation of the perpendicular bisector of segment AB given A(-2, 4) and B(2, 5)



$$\text{midpt } \left(\frac{x_1+x_2}{2}, \frac{y_1+y_2}{2} \right)$$
$$\text{Slope } AB = \frac{y_2-y_1}{x_2-x_1} = \frac{5-4}{2-(-2)} = \frac{1}{4}$$
$$\left(\frac{-2+2}{2}, \frac{4+5}{2} \right) = (0, \frac{9}{2}) = (0, 4.5)$$

$$m = -4 \quad (0, 4.5)$$

$$y - y_1 = m(x - x_1)$$

$$y - 4.5 = -4(x - 0)$$

$$y - 4.5 = -4x$$

$$y = -4x + 4.5$$

List the angles of triangle RST in order from smallest to biggest if R(-3, 1), S(2, -1) and T(5, 4)

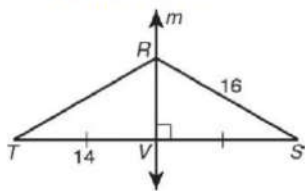
$$\begin{aligned} &RS \\ &\sqrt{(-3-2)^2 + (1+1)^2} \\ &\sqrt{(-5)^2 + (2)^2} \\ &\sqrt{29} \end{aligned}$$

$$\begin{aligned} &ST \\ &\sqrt{(5-2)^2 + (4+1)^2} \\ &\sqrt{(3)^2 + (5)^2} \\ &\sqrt{34} \\ &\angle T, \angle R, \angle S \end{aligned}$$

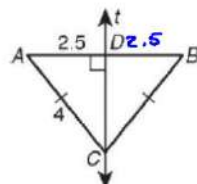
$$\begin{aligned} &RT \\ &\sqrt{(5+3)^2 + (4-1)^2} \\ &\sqrt{(8)^2 + (3)^2} \\ &\sqrt{73} \end{aligned}$$

Practice:

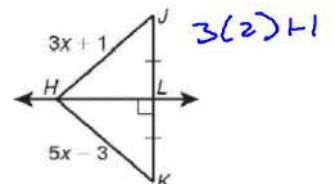
Find each measure.



1. $RT = \underline{16}$

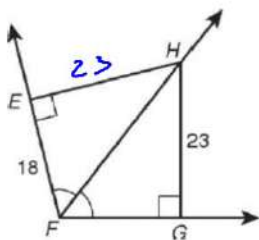


2. $AB = \underline{5}$

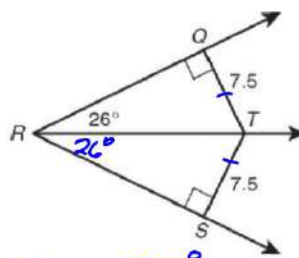


3. $HJ = \underline{7}$

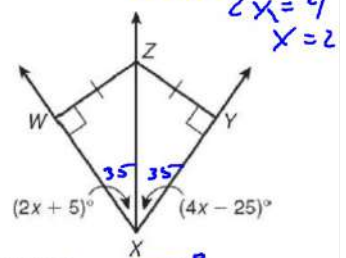
$HL = 15$
 $5x - 3 = 3x + 1$
 $2x - 3 = 1$
 $2x = 4$
 $x = 2$



4. $EH = \underline{23}$



5. $m\angle QRS = \underline{52^\circ}$



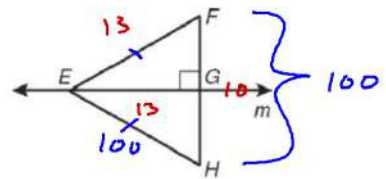
6. $m\angle WXZ = \underline{70^\circ}$

$2x + 5 = 4x - 25$
 $2x = 30$
 $x = 15$
 $2(15) + 5$
 35

Use the figure for #1-2.

1. Given that line m is the perpendicular bisector of

\overline{FH} and $EH = 100$, find EF . 100



2. Given that $EF = 13$, $FH = 10$, and $EH = 13$, find GH . 5

Use the figure for #3-6.

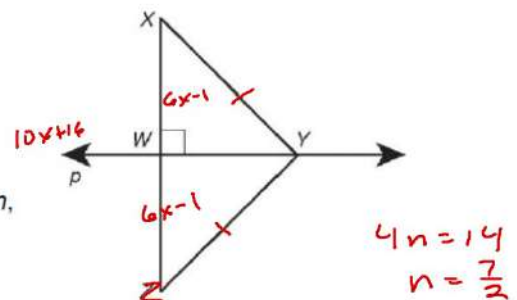
3. Given that line p is the perpendicular bisector of

\overline{XZ} and $XY = 15.5$, find ZY . 15.5

4. Given that $XZ = 38$, $YX = 27$, and $YZ = 27$,
find ZW . 19

5. Given that line p is the perpendicular bisector of \overline{XZ} ; $XY = 4n$,
and $YZ = 14$, find n . $\frac{7}{2} = 3.5$

6. Given that $XY = ZY$, $WX = 6x - 1$, and $XZ = 10x + 16$, find ZW . 53



$$\begin{aligned} 6x-1 + 6x-1 &= 10x+16 \\ 12x-2 &= 10x+16 \\ 2x-2 &= 16 \\ 2x &= 18 \\ x &= 9 \end{aligned}$$

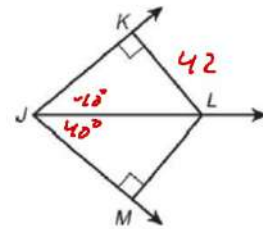
$$\begin{aligned} 4n &= 14 \\ n &= \frac{7}{2} \end{aligned}$$

Use the figure for Exercises #7-8.

7. Given that \overline{JL} bisects $\angle KJM$ and $KL = 42$, find ML . 42

8. Given that $KL = 4$ and $ML = 4$ and $m\angle MJL = 40^\circ$, find

$m\angle KJL$. 40°



Use the figure for Exercises #9-12.

9. Given that $FG = HG$ and $m\angle FEH = 56^\circ$, find

$m\angle GEH$. 28°

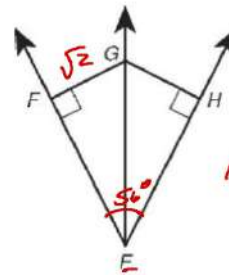
10. Given that \overline{EG} bisects $\angle FEH$ and $GF = \sqrt{2}$, find GH .

$\sqrt{2}$

11. Given that $\angle FEG \cong \angle GEH$, $FG = 10z - 30$, and

$HG = 7z + 6$, find FG . 90

12. Given that $GF = GH$, $m\angle GEF = 8a^\circ$, and $m\angle GEH = 24^\circ$, find a . 3



$$10z - 30 = 7z + 6$$

$$3z = 36$$

$$z = 12$$

$$8a = 24$$

$$a = 3$$

Solve each proportion

$$\frac{8}{b+10} = \frac{4}{2b-7}$$

$$8(2b-7) = 4(b+10)$$

$$16b - 56 = 4b + 40$$

$$12b - 56 = 40$$

$$12b = 96$$

$$b = 8$$

$$\frac{3x+2}{2x} = \frac{x+4}{x}$$

$$x(3x+2) = 2x(x+4)$$

$$3x^2 + 2x = 2x^2 + 8x$$

$$-2x^2$$

$$-2x^2$$

$$x^2 + 2x = 8x$$

$$x^2 - 6x = 0$$

$$x(x-6) = 0$$

$$x=0 \quad x-6=0$$

$$x=6$$

$$\frac{m}{8} = \frac{m+7}{9}$$

$$9m = 8(m+7)$$

$$9m = 8m + 56$$

$$m = 56$$

$$\frac{9+x}{x} = \frac{2x+2}{x}$$

$$x(9+x) = x(2x+2)$$

$$9x + x^2 = 2x^2 + 2x$$

$$-x^2$$

$$-x^2$$

$$9x = x^2 + 2x$$

$$-9x$$

$$-9x$$

$$0 = x^2 - 7x$$

$$x(x-7) = 0$$

$$x=0 \quad x-7=0$$

$$x=7$$

$$\frac{n-9}{n+5} = \frac{7}{4}$$

$$4(n-9) = 7(n+5)$$

$$4n-36 = 7n+35$$

$$-36 = 3n+35$$

$$-71 = 3n$$

$$n = -\frac{71}{3}$$

$$\frac{x}{5} = \frac{-4}{x-9}$$

$$x(x-9) = -20$$

$$x^2 - 9x = -20$$

$$x^2 - 9x + 20 = 0$$

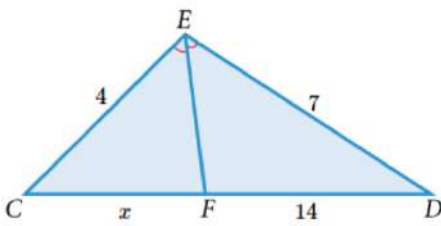
$$(x-5)(x-4) = 0$$

$$x-5=0 \quad x-4=0$$

$$x=5 \quad x=4$$

$$\frac{20}{-5 \cdot -4}$$

Find the value for x .



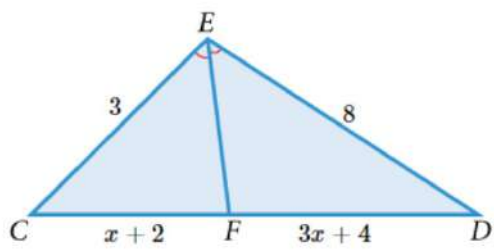
$$\frac{x}{14} = \frac{4}{7}$$

$$\frac{4}{x} = \frac{7}{14}$$

$$7x = 56$$

$$x = 8$$

Find the value for x .



$$\frac{x+2}{3x+4} = \frac{3}{8}$$

$$8(x+2) = 3(3x+4)$$

$$8x+16 = 9x+12$$

$$x = 4$$