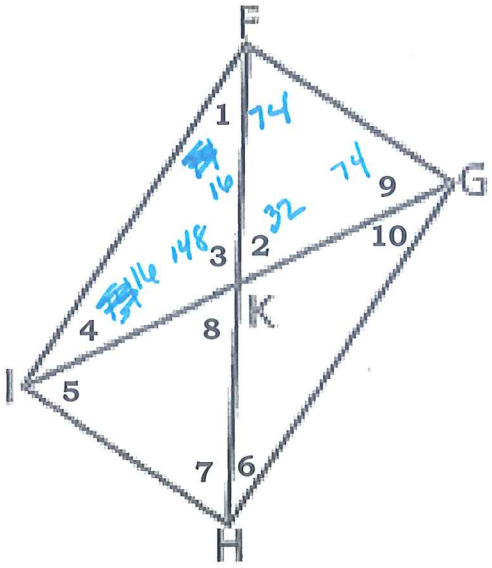
RECTANGLE HOMEWORK

Properties of Rectangles – a parallelogram with four right angles.

- Opposite sides of a parallelogram are congruent
- Opposite angles of a parallelogram are congruent
- Consecutive angles of a parallelogram are supplementary
- The sum of the angles of a parallelogram are $180(4-2) = 180 \cdot 2 = 360°$
- The diagonals of a parallelogram bisect each other
- The diagonals are congruent

1. If m<HFG= 74°, fill in all of the other angle measures, if FGHI is a rectangle.

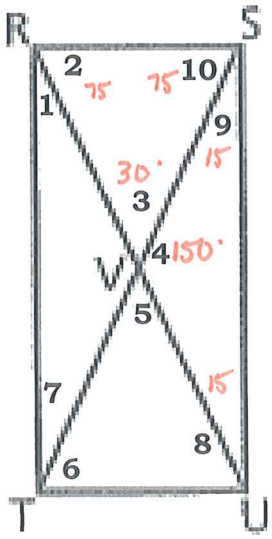


∠1 = 16°
∠2 = 32°
∠3 = 148°
∠4 = 16°
∠5 = 74°
∠6 = 16°
∠7 = 74°
∠8 = 32°
∠9 = 74°
∠10 = 16°

2. If m<RTV= 150°, fill in all of the other angle measure if RSTU is a rectangle .

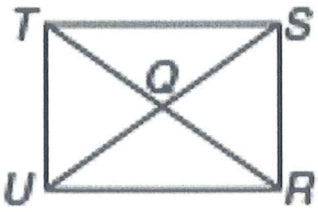
<RVT sorry!

∠1 = 15°
∠2 = 75°
∠3 = 30°
∠4 = 150°
∠5 = 30°
∠6 = 75°
∠8 = 75°
∠9 = 15°
∠10 = 75°



3. Use rectangle RSTU and state the property you used.

a.) If TR = 3x + 8 and US= 6x – 28. Find x, US and SQ.



diags are $\cong$ TR = US

$3x+8 = 6x-28$

$-3x \quad -3x$

$8 = 3x-28$

$+28 \quad +28$

$\frac{36}{3} = \frac{3x}{3}$ $x = 12$

x = 12

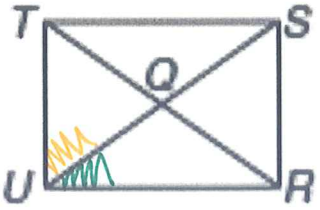
US = 44

SQ = 22

$US = 6(12)-28$

$SQ = \frac{1}{2}44$

b.) If m<SUR = 3x + 6 and m<SUT = 5x – 4. Find x and m<SUT.



$\angle SUR + \angle SUT = 90$ · def of a rectangle 4 Right $\angle$s

$3x+6+5x-4 = 90$

$8x+2 = 90$

$-2 \quad -2$

$8x = 92$

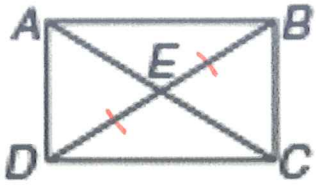
$x = 11.5$

$\angle SUT = 5(11.5)-4$

$\angle SUT = 53.5°$

4. Use rectangle ABCD and state the property you used.

a.) If EB = 5x + 8 and DE = 4x + 1. Find x, DE and BD.



EB $\cong$ DE diags bisect each other

$5x+8 = 4x+1$

$1x+8 = 1$

$-8 \quad -8$

$x = -7$ oops!

$5(-7)+8$

$4(-7)+1$

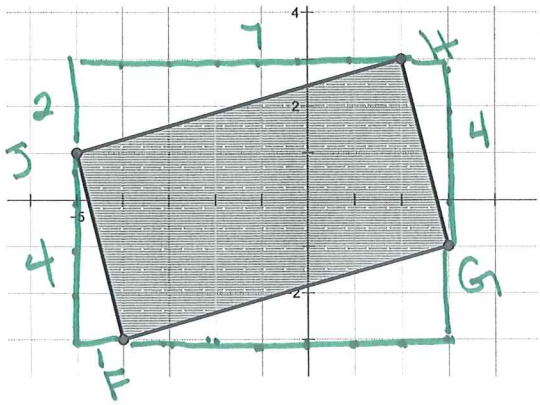
x = -7

DE = -27

BD = /

don't worry this should not come out to be neg. distance

5. Determine whether the figure with vertices F(-4,-3),G(3,-1), H(2,3) and J(-5,1) is a rectangle.



Slope HG = -4

Slope FG = $\frac{2}{7}$ > NOT $\perp$

Slope JF = -4 > NOT $\perp$

Slope JH = $\frac{2}{7}$

NO $\perp$ Slopes $\therefore$ NO RT $\angle$s

SO FGHJ is NOT a Rectangle