Name: _____   Hour: _____

Rectangles Homework

Directions: You must show all work and provide the justifications for your work. Failure to do so will result in a zero.

Must show all work for credit.

ALGEBRA RSTU is a rectangle.

1. If $UZ = x + 21$ and $ZS = 3x - 15$, find US.

$x = 18$
$US = 78$
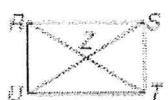
2. If $RZ = 3x + 8$ and $ZS = 6x - 28$, find UZ.

$x = 12$ $UZ = 44$
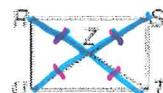
3. If $RT = 5x + 8$ and $RZ = 4x + 1$, find ZT.

$x = 2$
$ZT = 9$
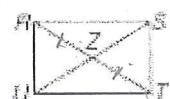
4. If $m\angle SUT = 3x + 6$ and $m\angle RUS = 5x - 4$, find $m\angle SUT$.

$x = 11$
$\angle SUT = 39°$
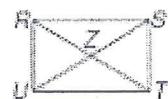
5. If $m\angle SRT = x^2 + 9$ and $m\angle UTR = 2x + 44$, find x.

$x = 7$ or $x = -5$
$\angle SRT = 58°$
$\angle SRT = 34°$
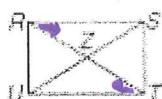
6. If $m\angle RSU = x^2 - 1$ and $m\angle TUS = 3x + 9$, find $m\angle RSU$.

$x = 5$ $\angle RSU = 3°$
$x = -2$ OR
            $\angle RSU = 24°$
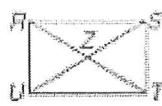
GHJK is a rectangle. Find each measure if $m\angle 1 = 37$.

7. $m\angle 2$ $53°$

8. $m\angle 3$ $37°$

9. $m\angle 4$ $37°$

10. $m\angle 5$ $53°$

11. $m\angle 6$ $106°$

12. $m\angle 7$ $74°$
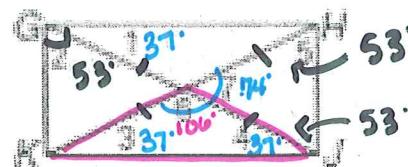
ABCD is a rectangle. Find each measure if m<1 = 65.

13. m<2 $25°$

14. m<3 $65°$

15. m<4 $65°$

16. m<5 $50°$

17. m<6 $130°$

18. m<7 $25°$

$\angle 1 + \angle 2 = 90°$
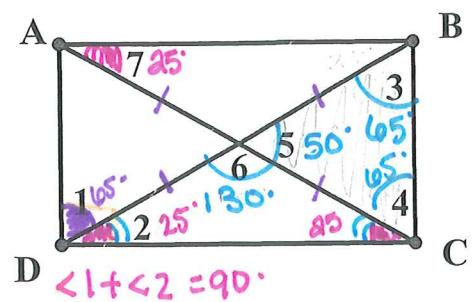
**Show all work and follow all instructions below. Failure to show work will result in a zero.**

13. Determine whether the figure with vertices F(-4,-3),G(3,-1), H(2,3) and J(-5,1) is a rectangle.
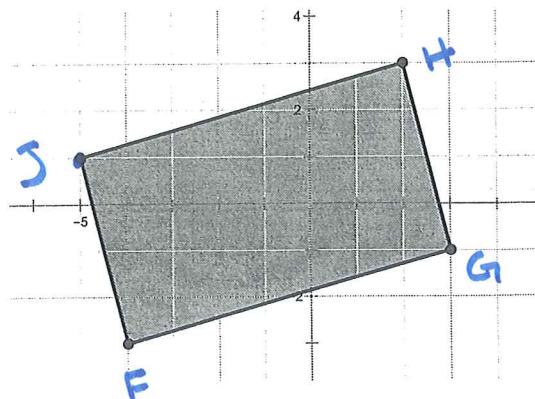
~~Yes~~ **NO**, students must show all slopes and then give a final answer

Slope JH = $\frac{2}{7}$ ⎫
                    ⎬ NOT ⊥
Slope JF = -4 ⎭

14. Determine whether the figure with vertices F(-4,-3),G(-5,8), H(6,9) and J(7,-2) is a rectangle.
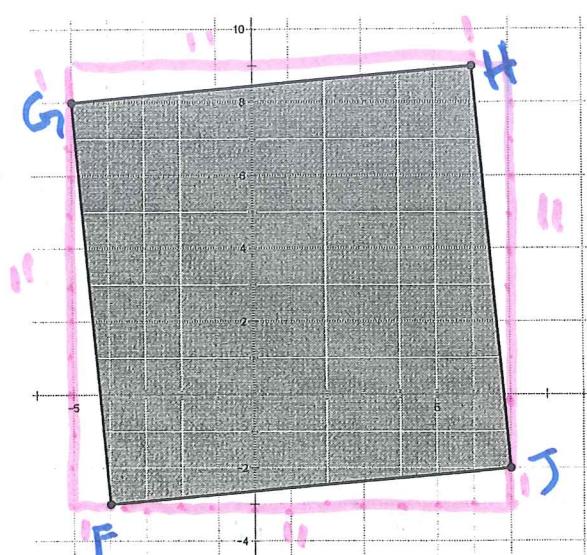
Yes, ~~No~~, students must show all slopes and give an answer

Slope HJ = $-\frac{11}{1}$ ⎫
                      ⎬ ⊥
Slope FJ = $\frac{1}{11}$ ⎭

Slope GF $-\frac{11}{1}$ ⎫
                    ⎬ ⊥
Slope GH = $\frac{1}{11}$ ⎭

Yes, con. sides are ⊥

∴ It is a rectangle.