

Name: Answers - Students must show work + geometry + Justify  
 Rectangles, Rhombi, and Squares HW

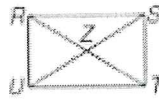
ALGEBRA  $RSTU$  is a rectangle.

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



$US = 78$

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



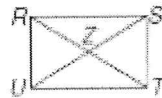
$UZ = 44$

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



$ZT = 9$

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



$\angle SUT = 39^\circ$

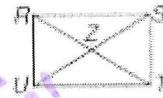
5. If  $m\angle SRT = x^2 + 9$  and  $m\angle UTR = 2x + 44$ , find  $x$ .



$x = 7$   
 $x = -5$

These will be on quiz + TESTS!

6. If  $m\angle RSU = x^2 - 1$  and  $m\angle TUS = 3x + 9$ , find  $m\angle RSU$ .



$\angle RSU = 3^\circ$   
 OR  
 $\angle RSU = 24^\circ$

$GHIJK$  is a rectangle. Find each measure if  $m\angle 1 = 37^\circ$ .

7.  $m\angle 2 = 53^\circ$

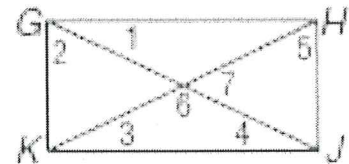
8.  $m\angle 3 = 37^\circ$

9.  $m\angle 4 = 37^\circ$

10.  $m\angle 5 = 53^\circ$

11.  $m\angle 6 = 106^\circ$

12.  $m\angle 7 = 74^\circ$



Rhombi/Squares

Use rhombus  $DKLM$  with  $AM = 4x$ ,  $AK = 5x - 3$ , and  $DL = 10$ .  $\angle STN = 30^\circ$  and  $\angle RVT = 120^\circ$ .



1. Find  $x = 3$

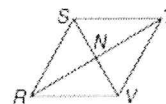
2. Find  $AL = 5$

3. Find  $m\angle KAL = 90^\circ$

4. Find  $DM$ . (hint) pythagorean thm after finding  $AM$   
 $DM = 13$

oops fix for Next year

Use rhombus  $RSTV$  with  $RS = 5y + 2$ ,  $ST = 3y + 6$ , and  $NV = 6$ .



5. Find  $y = 2$

6. Find  $TV = 12$

7. Find  $m\angle NTV = 30^\circ$

8. Find  $m\angle SVT = 60^\circ$

9. Find  $m\angle RST = 120^\circ$

10. Find  $m\angle SRV = 60^\circ$

Name: \_\_\_\_\_

### Rhombi/Squares Continued

Use rhombus  $PRYZ$  with  $RK = 4y + 1$ ,  $ZK = 7y - 14$ ,  
 $PK = 3x - 1$ , and  $YK = 2x + 6$ .



1. Find  $PY$ .

Find  $x$  1st  
 $x = 7$ ,  $PY = 40$

2. Find  $RZ$ .

$y = 5$   
 $RZ = 42$

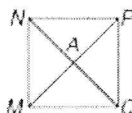
3. Find  $RY$ .

Use pyth. Thm  
 $RY = 29$

4. Find  $m\angle YKZ$ .

$= 90^\circ$

Use rhombus  $MNPQ$  with  $PQ = 3\sqrt{2}$ ,  $PA = 4x - 1$ , and  
 $AM = 9x - 6$ .  $NQ = 6$



5. Find  $AQ$ .

$= 3$

6. Find  $m\angle APQ$ .

$= 45^\circ$

7. Find  $m\angle MNP$ .

$= 90^\circ$

8. Find  $PM$ .

$= 6$

On graph paper, show all work and follow all instructions. Failure to show work on graph paper will result in a zero.

9. Determine whether the figure with vertices  $F(-4,-3)$ ,  $G(3,-1)$ ,  $H(2,3)$  and  $J(-5,1)$  is a rectangle. **No....**

10. Determine whether the figure with vertices  $F(-4,-3)$ ,  $G(-5,8)$ ,  $H(6,9)$  and  $J(7,-2)$  is a rectangle. **No....**

11. Determine whether the figure with vertices  $E(-2,-1)$ ,  $F(-4,3)$ ,  $G(1,5)$   $H(3,1)$  is a rhombus. **Yes....**

12. Determine whether the figure with vertices  $W(1,10)$ ,  $F(-4,0)$ ,  $Y(1,7)$   $Z(-4,7)$  is a rhombus. **No....**

13. Determine whether the figure with vertices  $A(0,3)$ ,  $B(-3,0)$ ,  $C(0,-3)$ , and  $D(3,0)$  is a square. **Yes....**

14. Determine whether the figure with vertices  $A(-4,0)$ ,  $B(-3,3)$ ,  $C(2,2)$ , and  $D(1,-1)$  is a square. **No....**