


# Geometry Honors 6-2 to 6-5 Review Homework

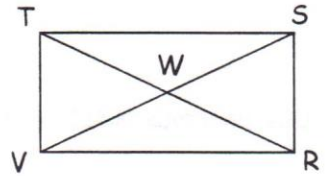
Name \_\_\_\_\_  
Date \_\_\_\_\_ Block \_\_\_\_\_

Put checks under each quadrilateral for each property that is true.

Property		Rectangle	Rhombus	Square
1. Opposite sides are $\parallel$	✓	✓	✓	✓
2. Opposite sides are $\cong$	✓	✓	✓	✓
3. Opposite angles are $\cong$	✓	✓	✓	✓
4. Consecutive angles are supplementary	✓	✓	✓	✓
5. A diagonal forms $2 \cong \Delta$ s	✓	✓	✓	✓
6. The diagonals bisect each other	✓	✓	✓	✓
7. The diagonals are $\cong$		✓		
8. The diagonals are $\perp$			✓	
9. The diagonals bisect opposite angles			✓	
10. All angles are right angles		✓		
11. All sides are $\cong$			✓	

Given rectangle RSTV, find the values of  $x$  and  $y$ .

\*Algebraic review of Systems of Equations



12.  $VW = 24 + y$   
 $WS = 36$   
 $RS = x - y$   
 $VT = 9$

Handwritten work:  
 $24 + y = 36$   
 $y = 12$   
 $x - y = 9$   
 $x - 12 = 9$   
 $x = 21$

13.  $VR = 54$   
 $TS = x + 22$   
 $VT = 2y - x$   
 $RS = x + 2$

Handwritten work for 13:  
 $54 = x + 22$   
 $x = 32$   
 $2y - x = x + 2$   
 $2y - 2 = 2x$   
 $2y - 2 = 2(32)$   
 $2y = 66$   
 $y = 33$

14.  $m\angle TVS = 4x + 8$   
 $m\angle SVR = 5x - 8$

Handwritten work:  
 $4x + 8 + 5x - 8 = 90$   
 $9x = 90$   
 $x = 10$

15.  $VS = x^2$   
 $TR = 6x - 8$

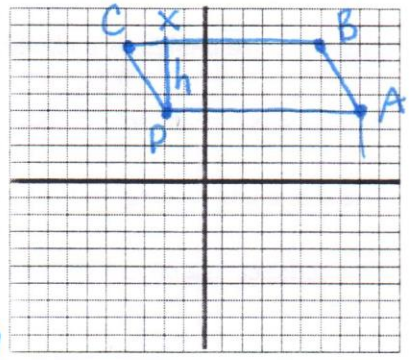
Handwritten work:  
 $x^2 = 6x - 8$   
 $x^2 - 6x + 8 = 0$   
 $(x - 4)(x - 2) = 0$   
 $x = 4 \text{ or } 2$

Find the perimeter and area of the parallelogram with the given coordinates.

16.  $A(8, 4), B(6, 8), C(-4, 8), D(-2, 4)$

Handwritten work:  
 $AB = \sqrt{16 + 4} = \sqrt{20} = CD$   
 $BC = 10 = AD$   
 $P = 2(AB) + 2(BC)$   
 $2(\sqrt{20}) + 20$   
 $P = 28.9$   
 units

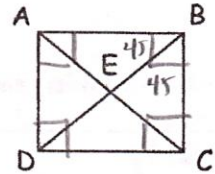
Area =  $b \cdot h$   
 $= AD(DX)$   
 $= 10(4)$   
 $A = 40 \text{ units}^2$



Use square ABCD and the given information to solve each problem. Show work for each!

17. If  $m\angle AEB = 3x$ , then  $x = \underline{30}$ .

$3x = 90$   
 $x = 30$



18. If  $m\angle BAC = 9x$ , then  $x = \underline{5}$ .

$9x = 45$   
 $x = 5$

19. If  $AB = 2x + 4$  and  $CD = 3x - 5$ , then  $BC = \underline{22}$ .

$2x + 4 = 3x - 5$   
 $9 = x$

$BC = AB =$   
 $2(9) + 4$   
 $18 + 4 = 22$

20. If  $m\angle DAC = y$  and  $m\angle BAC = 3x$ , then  $x = \underline{15}$ .

$3x + y = 90$   
 $3x + 45 = 90$

$\rightarrow 3x = 45$   
 $x = 15$

21. If  $AB = x^2 - 15$  and  $BC = 2x$ , then  $x = \underline{5}$  ONLY.

$x^2 - 15 = 2x$   
 $x^2 - 2x - 15 = 0$   
 $(x - 5)(x + 3) = 0$

$x = 5, -3$  but  $-3(2) = BC$  which would make a length neg.

Use rhombus ABCD and the given information to find each measure. Use the picture!

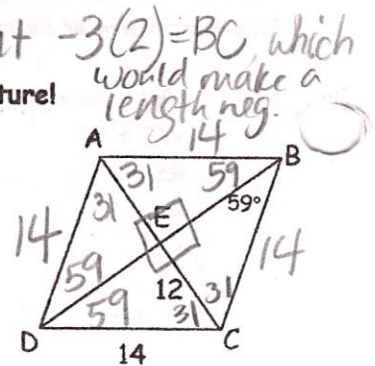
22.  $m\angle BCE = \underline{31}$ .

23.  $m\angle BEC = \underline{90}$ .

24.  $AC = \underline{24}$ .

25.  $m\angle ABD = \underline{59}$ .

26.  $AD = \underline{14}$ .



Decide whether each statement is *sometimes*, *always*, or *never* true.

27. A rhombus is equilateral.

Always

28. The diagonals of a rectangle are perpendicular.

Sometimes

29. The opposite angles of a rhombus are supplementary.

Sometimes

30. A square is a rectangle.

Always

31. The diagonals of a rectangle bisect each other.

Always

32. The consecutive angles of a square are supplementary.

Always