

Special Parallelograms

Worksheet

Name _____

For 1-8, complete the following charts by putting checks in the boxes that are true.

	4 Sides	Opp. Sides \parallel	Opp. Sides \cong	All Sides \cong	Opp. Angles \cong	All Angles \cong
1. Parallelogram						
2. Rectangle						
3. Rhombus						
4. Square						

The diagonals ...	bisect each other	are congruent	bisect opposite angles	are perpendicular
5. Parallelogram				
6. Rectangle				
7. Rhombus				
8. Square				

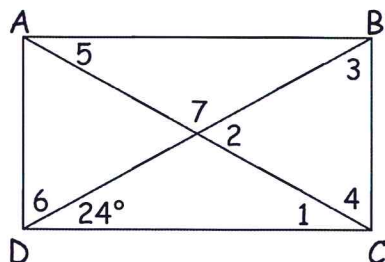
For 9-17, determine if the statement is true or false.

- _____ 9. All quadrilaterals are parallelograms.
 _____ 10. All parallelograms are quadrilaterals.
 _____ 11. A square is a parallelogram.
 _____ 12. A parallelogram with a right angle is a square.
 _____ 13. All rectangles are parallelograms.
 _____ 14. All rhombuses are squares.
 _____ 15. All squares are rectangles.
 _____ 16. A parallelogram with four congruent sides is a square.
 _____ 17. A parallelogram with perpendicular diagonals is a square.

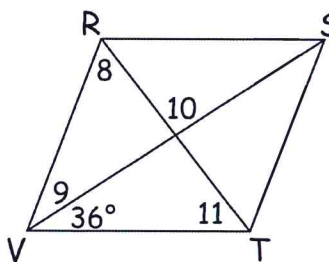
For 18-21, find the measure of the numbered angles in the figures.

- $m\angle 1 =$ _____
 $m\angle 2 =$ _____
 $m\angle 3 =$ _____
 $m\angle 4 =$ _____
 $m\angle 5 =$ _____
 $m\angle 6 =$ _____
 $m\angle 7 =$ _____
 $m\angle 8 =$ _____
 $m\angle 9 =$ _____
 $m\angle 10 =$ _____
 $m\angle 11 =$ _____
 $m\angle 12 =$ _____

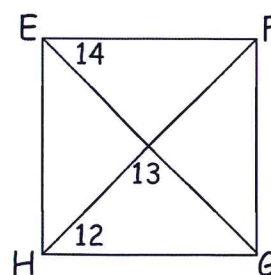
18. ABCD is a *rectangle*



19. RSTV is a *rhombus*



20. EFGH is a *square*

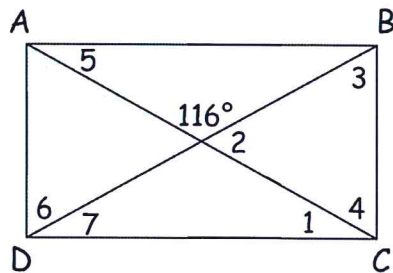


$m\angle 13 =$ _____

$m\angle 14 =$ _____

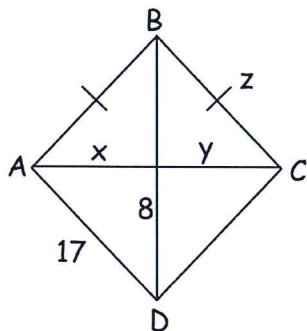
21. ABCD is a rectangle

- $m\angle 1 =$ _____
 $m\angle 2 =$ _____
 $m\angle 3 =$ _____
 $m\angle 4 =$ _____
 $m\angle 5 =$ _____
 $m\angle 6 =$ _____
 $m\angle 7 =$ _____

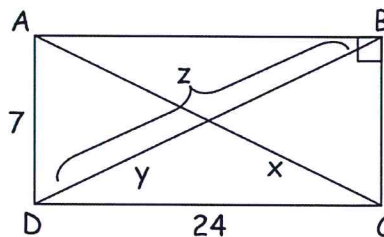


For 22-23, for the following parallelograms, (a) choose the best name, (b) find the value of each variable.

22.



23.

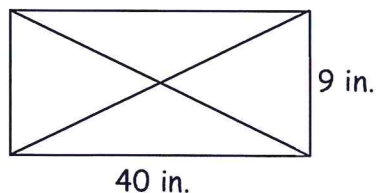


24. In quadrilateral MATH, \overline{MT} and \overline{AH} bisect each other at R and $\overline{MR} \cong \overline{HR}$.

- MATH must be a
 I. parallelogram
 II. rectangle
 III. square

- A. I only B. II only C. I and II D. II and III E. I, II and III

25. Cindy is making the design shown below with silver wire. It consists of a rectangle and its two diagonals. How much wire does she need to make this design?



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2. Rectangle	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3. Rhombus	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
4. Square	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

The diagonals ...	bisect each other	are congruent	bisect opposite angles	are perpendicular
5. Parallelogram	<input checked="" type="checkbox"/>			
6. Rectangle	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
7. Rhombus	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
8. Square	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

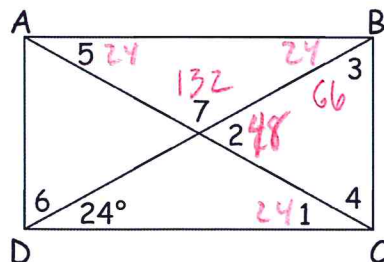
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For 18-21, find the measure of the numbered angles in the figures.

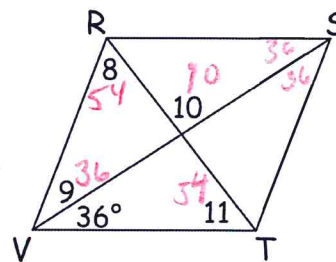
- $m\angle 1 = 24$
 $m\angle 2 = 48$
 $m\angle 3 = 66$
 $m\angle 4 = 66$
 $m\angle 5 = 24$
 $m\angle 6 = 66$
 $m\angle 7 = 132$
 $m\angle 8 = 54$
 $m\angle 9 = 36$
 $m\angle 10 = 90$
 $m\angle 11 = 54$
 $m\angle 12 = 45$

18. ABCD is rectangle

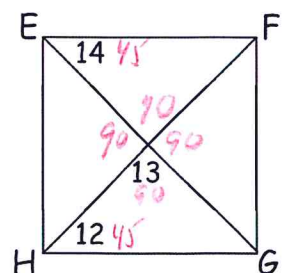


- $m\angle 13 = 90$
 $m\angle 14 = 45$

19. RSTV is a rhombus

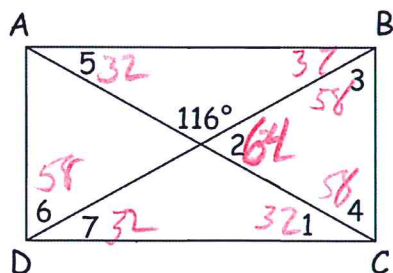


20. EFGH is a square



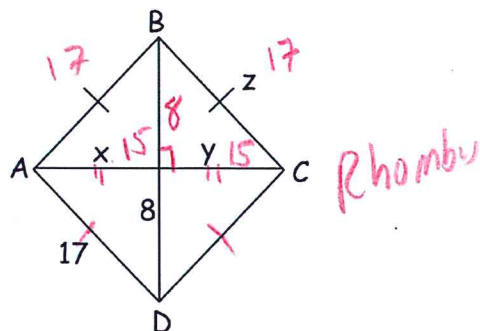
21. ABCD is a rectangle

$$\begin{aligned} m\angle 1 &= 32 \\ m\angle 2 &= 64 \\ m\angle 3 &= 58 \\ m\angle 4 &= 58 \\ m\angle 5 &= 32 \\ m\angle 6 &= 58 \\ m\angle 7 &= 32 \end{aligned}$$

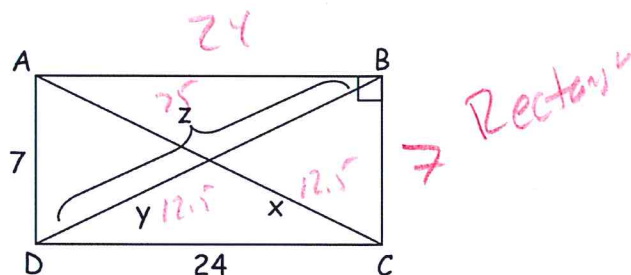


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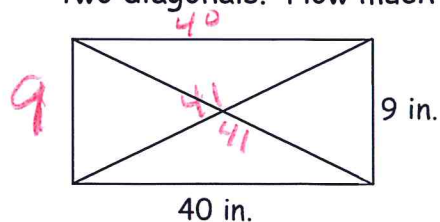


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$$9^2 + 40^2 = c^2$$

$$c = 41$$

$$9 + 40 + 9 + 40 + 41 + 41 = 180 \text{ in}$$