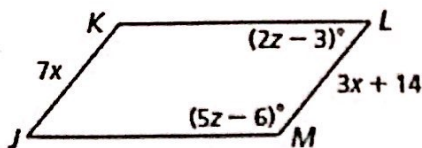


Find the value of each variable in the parallelogram below. Name the relationship you used to solve for each variable.



Since Opposite sides are \cong , $x = 4.5$.

Since Consecutive angles are Supp., $z = 87$.

$$2z - 3 + 5z - 6 = 180$$

$$3x + 14 = 7x$$

$$7z - 9 = 180$$

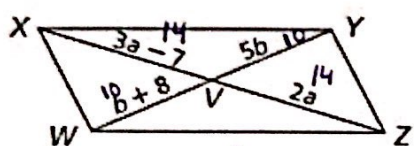
$$14 = 4x$$

$$7z = 189$$

$$\boxed{4.5 = x}$$

$$\boxed{z = 87}$$

2. Find the measure of the following lengths:



$WV = 10$ $XZ = 28$ $VZ = 14$ $YW = 20$

$$3a - 7 = 2a$$

$$b + 8 = 5b$$

$$-7 = -a$$

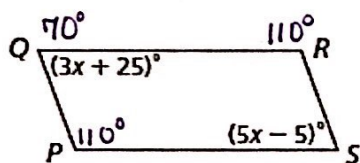
$$8 = 4b$$

$$\boxed{7 = a}$$

$$\boxed{2 = b}$$

Diagonals bisect each other

3. What is the measure of $\angle P$?



$$3x + 25 = 5x - 5$$

$$\angle Q = 3(15) + 25$$

$$30 = 2x$$

$$\angle Q = 70^\circ$$

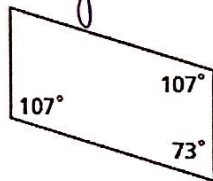
$$15 = x$$

$$\boxed{\angle P = 110^\circ}$$

opp \angle 's are \cong

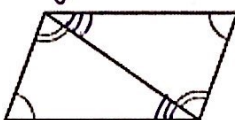
4. Prove whether the following figures are parallelograms or not:

a. Yes



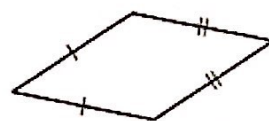
An angle is supplementary to its two consecutive angles.

b. Yes



You would know the other pair of alt int angles are congruent, thus making opposite angles congruent

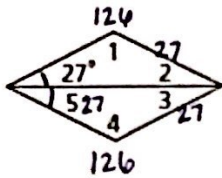
c. No



Opposite sides are not \cong

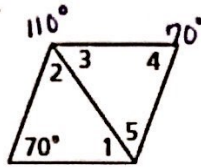
5. The following figures are rhombi. Determine the measure of each of the numbered angles.

a.



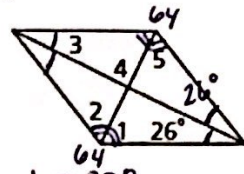
$\angle 1 = 126^\circ$ $\angle 4 = 126^\circ$
 $\angle 2 = 27^\circ$ $\angle 5 = 27^\circ$
 $\angle 3 = 27^\circ$

b.



$\angle 1 = 55^\circ$
 $\angle 2 = 55^\circ$
 $\angle 3 = 55^\circ$
 $\angle 4 = 70^\circ$
 $\angle 5 = 55^\circ$

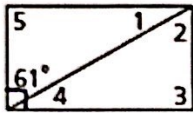
c.



$\angle 1 = 32^\circ$
 $\angle 2 = 32^\circ$
 $\angle 3 = 26^\circ$
 $\angle 4 = 90^\circ$
 $\angle 5 = 32^\circ$

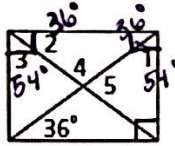
6. The following figures are rectangles. Determine the measure of each of the numbered angles.

a.



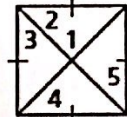
$\angle 1 = 29^\circ$
 $\angle 2 = 61^\circ$
 $\angle 3 = 90^\circ$
 $\angle 4 = 29^\circ$
 $\angle 5 = 90^\circ$

b.



$\angle 1 = 54^\circ$
 $\angle 2 = 36^\circ$
 $\angle 3 = 54^\circ$
 $\angle 4 = 108^\circ$
 $\angle 5 = 72^\circ$

c.

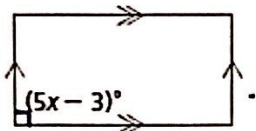


technically a square

$\angle 1 = 90^\circ$
 $\angle 2 = 45^\circ$
 $\angle 3 = 45^\circ$
 $\angle 4 = 45^\circ$
 $\angle 5 = 45^\circ$

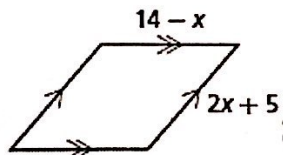
7. Find the value of x in the following figures. The type of parallelogram is stated.

a. Rectangle



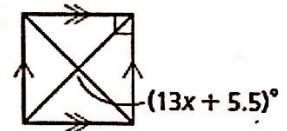
$5x - 3 = 90$
 $5x = 93$
 $x = 18.6$

b. Rhombus



$14 - x = 2x + 5$
 $9 = 3x$
 $3 = x$

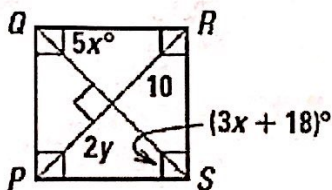
c. Square



$13x + 5.5 = 90$
 $13x = 84.5$
 $x = 6.5$

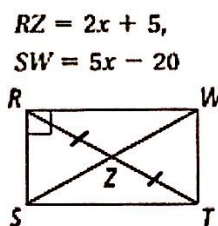
8. Solve for the given variables:

a. Square



$3x + 18 = 45$ $2y = 10$
 $3x = 27$ $y = 5$
 $x = 9$

b. Rectangle



$RZ = 2x + 5$
 $SW = 5x - 20$
 $SW = RZ + ZT$
 $5x - 20 = 2x + 5 + 2x + 5$
 $5x - 20 = 4x + 10$
 $x = 30$