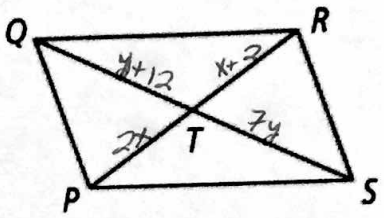
Homework 6.6: Review of Parallelograms & Quadrilaterals

Name: Key

Math 3

1. Use the diagram below to solve for x and y if the figure is a parallelogram.



a) PT = 2x, QT = y + 12, TR = x + 2, TS = 7y

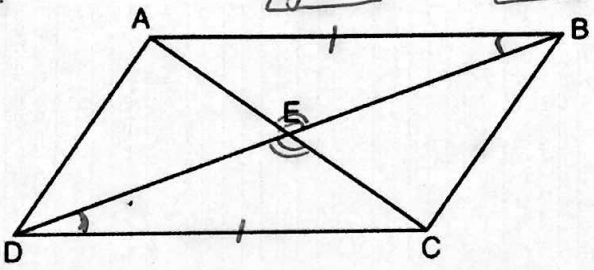
$2x = x+2$ → $x=2$; $y+12=7y$ → $y=2$

b) PT = y, TR = 4y - 15, QT = x + 6, TS = 4x - 6

$y = 4y-15$ → $y=5$; $x+6=4x-6$ → $x=4$

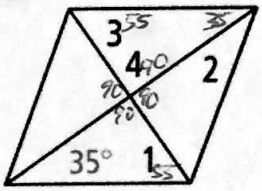
2.) **Given:** $\angle ABE \cong \angle CDE$, $\overline{AB} \cong \overline{CD}$

Prove: $\overline{AD} \cong \overline{CB}$



Statements	Reasons
$\angle ABE \cong \angle CDE$	Given
$\overline{AB} \cong \overline{CD}$	Given
$\angle AEB \cong \angle CED$	Vert $\angle$s are $\cong$
$\triangle ABE \cong \triangle CDE$	AAS
$\overline{BE} \cong \overline{DE}$, $\overline{AE} \cong \overline{EC}$	CPCTC
ABCD is a $\square$	diags bisect each other (def'n of $\angle$'s)
$\overline{AD} \cong \overline{CB}$	def'n of $\square$

2. Find the measure of each angle if the figure is a rhombus.



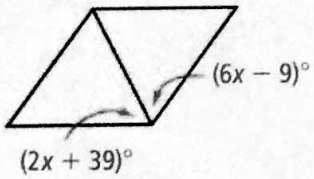
a) Find the m∠1. 55°

b) Find the m∠2. 35°

c) Find the m∠3. 55°

d) Find the m∠4. 90°

3. Solve for x if the figure is a rhombus.

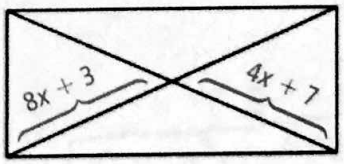


$6x-9=2x+39$

$4x=48$

$x=12$

4. Solve for x if the figure is a rectangle.

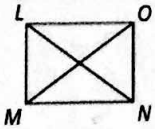


$8x+3=4x+7$

$4x=4$

$x=1$

5. What is the length of LN if the figure is a rectangle?



$LN = 4x - 7$

$MO = 2x + 13$

$4x-7=2x+13$

$2x=20$

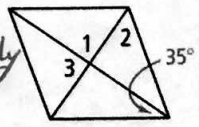
$x=10$

$LN = 4(10)-7$

$= 33$

6. Solve for the missing angle measures if the figure is a rhombus.

Hmm, same basically as above.



$m\angle 1 = 90$

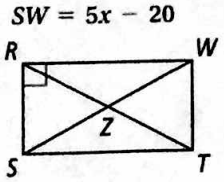
$m\angle 3 = 90$

$m\angle 2 = 55^\circ$

7. What is the length of SW?

$RZ = 2x + 5$,

$SW = 5x - 20$



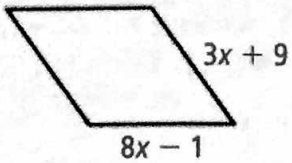
$2(2x+5)=5x-20$

$4x+10=5x-20$

$30=x$

$SW = 130$

8. Solve for x if the figure is a rhombus.



$3x+9=8x-1$

$10=5x$

$2=x$