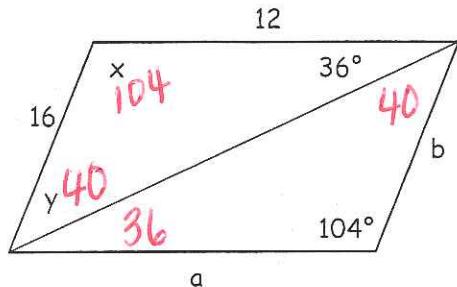


Geometry/Trig
Unit 5 Review Packet

Name _____ Date _____ Block _____

For #1 - 4, a and b are segment lengths; x and y are angle measurements.

1) Figure is a Parallelogram



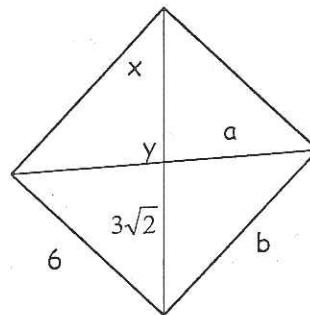
$$a = \underline{12}$$

$$b = \underline{16}$$

$$x = \underline{104^\circ}$$

$$y = \underline{40^\circ}$$

2) Figure is a Square



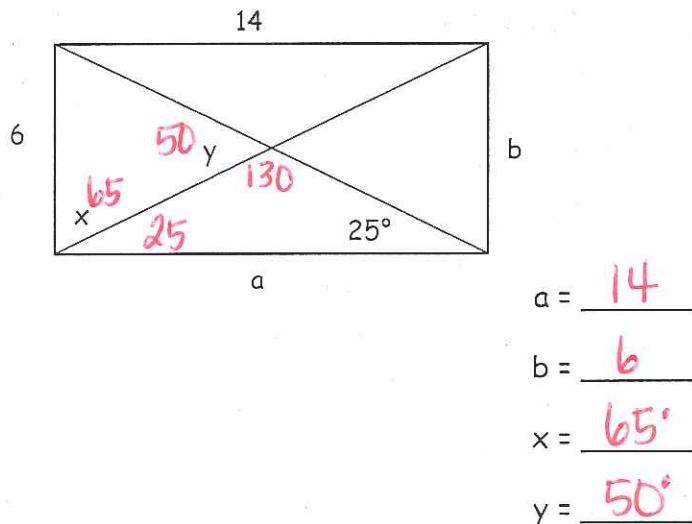
$$a = \underline{3\sqrt{2}}$$

$$b = \underline{6}$$

$$x = \underline{45^\circ}$$

$$y = \underline{90^\circ}$$

3) Figure is a Rectangle



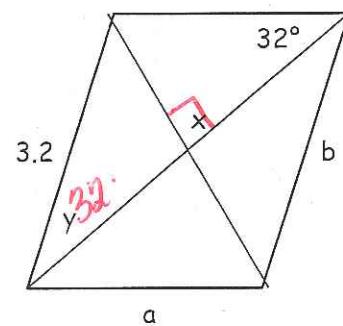
$$a = \underline{14}$$

$$b = \underline{6}$$

$$x = \underline{65^\circ}$$

$$y = \underline{50^\circ}$$

4) Figure is a Rhombus



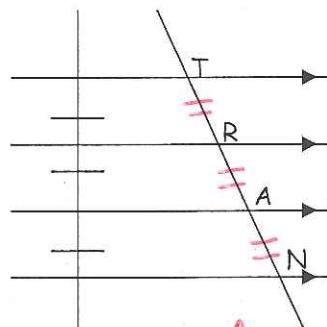
$$a = \underline{3.2}$$

$$b = \underline{3.2}$$

$$x = \underline{90^\circ}$$

$$y = \underline{32^\circ}$$

$$4x = 5x - 9$$



$$4x + 9 = 9x + 6$$

$$-5x = -3$$

$$5. \text{ If } TR = 2x \text{ and } RN = 5x - 9, \text{ then } x = \underline{9}$$

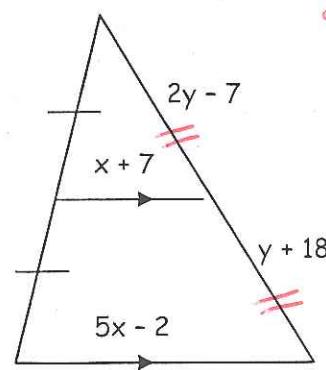
$$6. \text{ If } TA = 4x + 9 \text{ and } RN = 9x + 6, \text{ then } x = \underline{3/5}$$

$$7. \text{ If } TA = 16, \text{ then } TN = \underline{24}$$

8) Solve for x and y.

$$2y - 7 = y + 18$$

$$y = 25$$



$$2(x+7) = 5x - 2$$

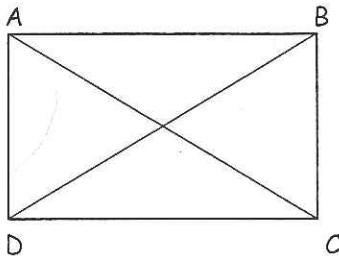
$$2x + 14 = 5x - 2$$

$$-3x = -16$$

$$x = \underline{16/3}$$

$$y = \underline{25}$$

9) ABCD is a Rectangle



$$AC = x^2, BD = x + 72$$

$$x^2 = x + 72$$

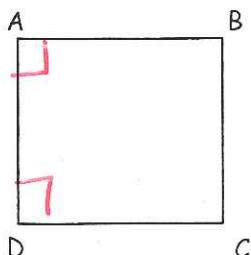
$$x^2 - x - 72 = 0$$

$$(x-9)(x+8) = 0$$

$$x = 9, x = -8$$

$$x = \underline{9}$$

$$x = \underline{-8}$$

10) ABCD is a Square

$$m\angle DAB = 4x + 4y$$

$$m\angle ADC = 8x - 4y$$

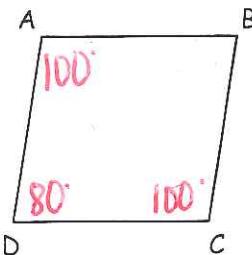
$$\begin{array}{r} 4x + 4y = 90 \\ + 8x - 4y = 90 \\ \hline 12x = 180 \\ x = 15 \end{array}$$

$$\begin{array}{r} 4(15) + 4y = 90 \\ 4y = 30 \\ y = 7.5 \end{array}$$

$$x = \underline{15}$$

$$y = \underline{7.5}$$

11) ABCD is a Rhombus



$$m\angle DAB = 15y - 35$$

$$m\angle ADC = 80$$

$$m\angle DCB = 20x$$

$$15y - 35 = 100$$

$$y = 5$$

$$15y - 35 = 100$$

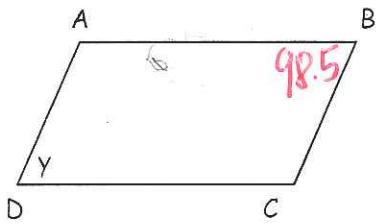
$$15y = 135$$

$$y = 9$$

$$x = \underline{5}$$

$$y = \underline{9}$$

12) ABCD is a Parallelogram



$$m\angle A = 5x + 9$$

$$m\angle B = 7x - 3$$

$$5x + 9 + 7x - 3 = 180$$

$$12x + 6 = 180$$

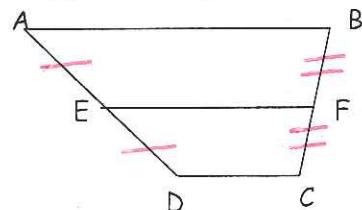
$$12x = 174$$

$$x = 14.5$$

$$x = \underline{14.5}$$

$$y = \underline{98.5}$$

13) ABCD is a Trapezoid, EF is the median



$$\begin{array}{l} AE = 5x - 7 \\ ED = 3x + 1 \end{array}$$

$$BF = y^2$$

$$FC = -y + 6$$

$$5x - 7 = 3x + 1$$

$$2x = 8$$

$$y^2 = -y + 6$$

$$y^2 + y - 6 = 0$$

$$(y+3)(y-2) = 0$$

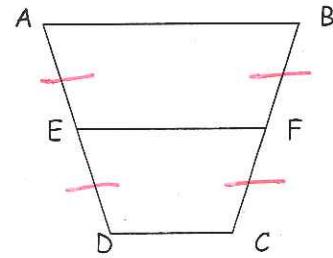
$$x = \underline{4}$$

$$y = -3, y = 2$$

$$y = \underline{-3}$$

$$y = \underline{2}$$

14) ABCD is an Isosceles Trapezoid, EF is the median



$$AB = 8x - 2$$

$$EF = 3x + 7$$

$$DC = 3x + 6$$

$$3x + 7 = \frac{8x - 2 + 3x + 6}{2}$$

$$2(3x + 7) = 11x + 4$$

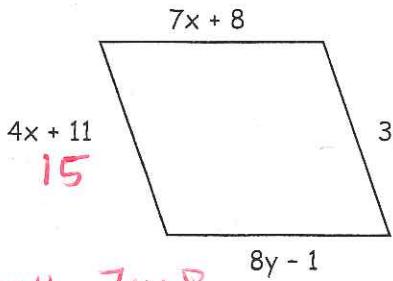
$$6x + 14 = 11x + 4$$

$$-5x = -10$$

$$x = \underline{2}$$

$$x = \underline{2}$$

15) The figure is a Rhombus.



$$4x + 11 = 7x + 8$$

$$-3x = -3$$

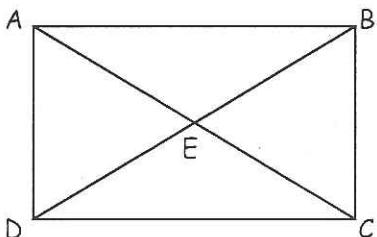
$$x = 1$$

$$\begin{aligned} 3y + 9 &= 15 \\ 3y &= 6 \\ y &= 2 \end{aligned}$$

$$x = 1$$

$$y = 2$$

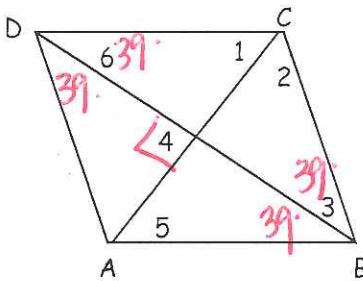
17) ABCD is a Rectangle [BD = $8x + 3$ and EC = $5x$].



$$\begin{aligned} 2(5x) &= 8x + 3 \\ 10x &= 8x + 3 \\ 2x &= 3 \end{aligned}$$

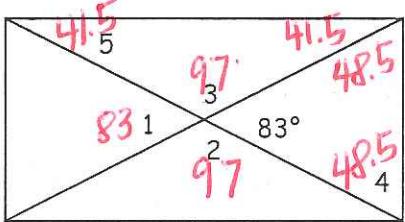
$$\begin{aligned} x &= 1.5 \\ AE &= 7.5 \\ AC &= 15 \\ ED &= 7.5 \\ BD &= 15 \\ BE &= 7.5 \end{aligned}$$

19) Rhombus [$m\angle ABC = 78^\circ$]



$$\begin{aligned} m\angle 1 &= 51^\circ \\ m\angle 2 &= 51^\circ \\ m\angle 3 &= 39^\circ \\ m\angle 4 &= 90^\circ \\ m\angle 5 &= 51^\circ \\ m\angle 6 &= 39^\circ \end{aligned}$$

21) The figure is a Rectangle.



$$m\angle 1 = 83^\circ$$

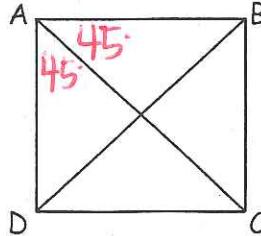
$$m\angle 2 = 97^\circ$$

$$m\angle 3 = 97^\circ$$

$$m\angle 4 = 48.5^\circ$$

$$m\angle 5 = 41.5^\circ$$

16) ABCD is a Square. Solve for x and y.



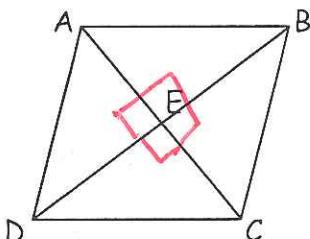
$$\begin{aligned} m\angle DAC &= 5x + 2y \\ m\angle CAB &= 4x - 2y \end{aligned}$$

$$\begin{aligned} 5(10) + 2y &= 45 \\ 2y &= -5 \\ y &= -2.5 \end{aligned}$$

$$\begin{aligned} + 5x + 2y &= 45 \\ 4x - 2y &= 45 \\ \hline 9x &= 90 \\ x &= 10 \end{aligned}$$

$$\begin{aligned} x &= 10 \\ y &= -2.5 \end{aligned}$$

18) ABCD is a Rhombus. Solve for x and y.



$$\begin{aligned} m\angle AED &= 3x + 6y \\ m\angle DEC &= 2x + 9y \end{aligned}$$

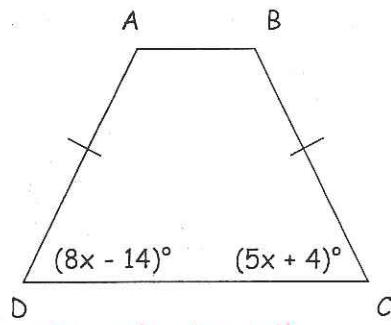
$$\begin{aligned} 3x + 6(6) &= 90 \\ 3x &= 54 \\ x &= 18 \end{aligned}$$

$$\begin{aligned} 2(3x + 6y) &= 90 \\ -3(2x + 9y) &= 90 \end{aligned}$$

$$\begin{aligned} + 6x + 12y &= 180 \\ -6x - 27y &= -270 \\ \hline -15y &= -90 \\ y &= 6 \end{aligned}$$

$$\begin{aligned} x &= 18 \\ y &= 6 \end{aligned}$$

20) ABCD is an Isosceles Trapezoid. Solve for x and the angle measurements.



$$\begin{aligned} x &= 6 \\ m\angle A &= 146^\circ \\ m\angle B &= 146^\circ \\ m\angle C &= 34^\circ \\ m\angle D &= 34^\circ \end{aligned}$$

$$8x - 14 = 5x + 4$$

$$3x = 18$$

22) Identify the five ways to prove a quadrilateral is a parallelogram.

- 1) if 2 pairs of opposite sides are \cong , then it is a \square .
- 2) if 2 pairs of opposite angles are \cong , then it is a \square .
- 3) if one pair of opposite sides is both \cong and \parallel , then it's a \square
- 4) if diagonals bisect each other, then its a \square .
- 5) Definition of a Parallelogram.

23) Complete the proof.

Given: ABCD is a parallelogram; $\overline{CD} \cong \overline{CE}$

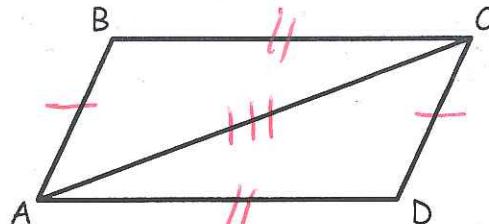
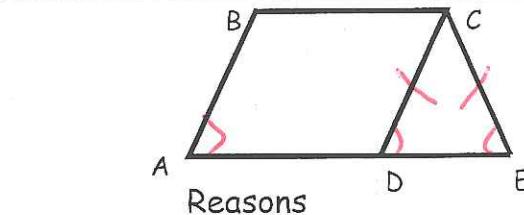
Prove: $\angle A \cong \angle E$

Statements	Reasons
1. $\overline{CD} \cong \overline{CE}$	1. Given
2. $\angle CDE \cong \angle E$	2. if 2 sides of a Δ are \cong , then the included angles are \cong .
3. ABCD is a parallelogram	3. If opp. sides of a \square are \cong , then the opp. angles are \cong . Given
4. $\overline{AB} \parallel \overline{CD}$	4. Definition of a parallelogram
5. $\angle A \cong \angle CDE$	5. If lines are parallel, then corresponding angles are \cong
6. $\angle A \cong \angle E$	6. Transitive

25) Complete the proof.

Given: ABCD is a parallelogram

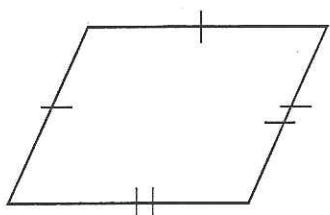
Prove: $\triangle ABC \cong \triangle CDA$



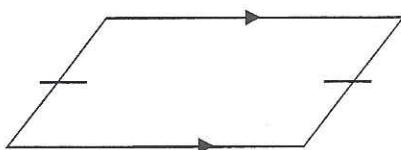
Statements	Reasons
1. ABCD is a parallelogram	1. Given
2. $\overline{AB} \cong \overline{CD}$, $\overline{BC} \cong \overline{AD}$	2. Opposite sides of a parallelogram are congruent.
3. $\overline{AC} \cong \overline{AC}$	3. Reflexive
4. $\triangle ABC \cong \triangle CDA$	4. SSS Postulate

25) Classify each figure as specifically as you can based on the markings on the diagram. Your choices are - quadrilateral, parallelogram, rhombus, rectangle, square, or trapezoid.

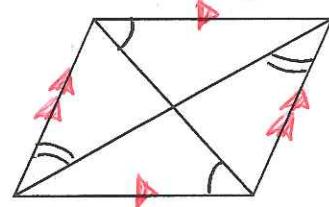
a. Quadrilateral



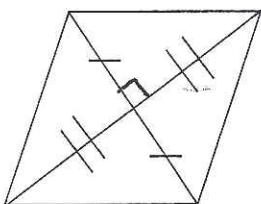
b. Trapezoid



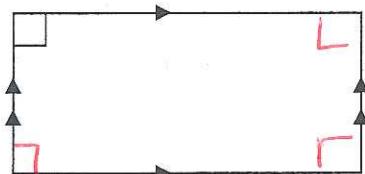
c. Parallelogram



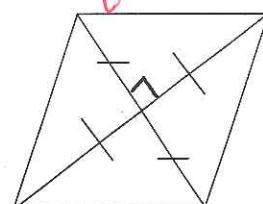
d. Rhombus



e. Rectangle



f. Square

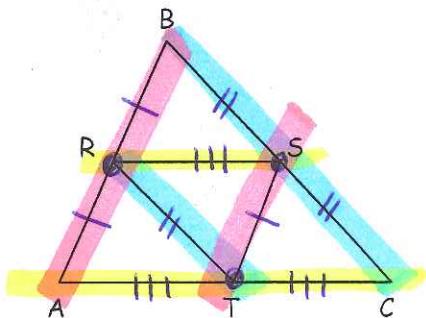


Directions: Given R, S and T are midpoints of the sides of $\triangle ABC$. For #26 - 33, complete the chart.

	AB	BC	AC	ST	RT	RS
26)	12	14	18	b	7	9
27)	20	15	22	10	7.5	11
28)	10	18	15.6	5	9	7.8

29) If $RS = 2x + 3$, then $AC = 4x + 6$.

$$2x+3 + 2x+3 =$$



30) If $AB = 14y - 10$, then $TS = 7y - 5$.

$$\frac{14y-10}{2}$$

31) If $RT = 12z - 8$, then $BS = 12z - 8$.

32) Name all triangles congruent to $\triangle BR S$.

$\triangle RAT, \triangle ASTC, \triangle TSR$

33) If the perimeter of $\triangle RST = 12$, find the perimeter of $\triangle ABC$.

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