

Name: Key

Period: \_\_\_\_\_

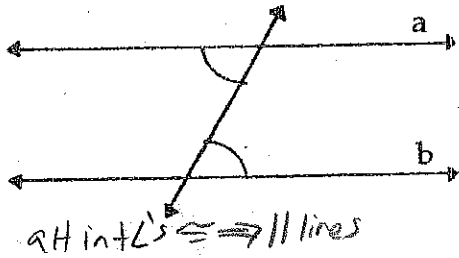
AA

**Geometry - Quiz (Lessons 5.1 through 5.3)**

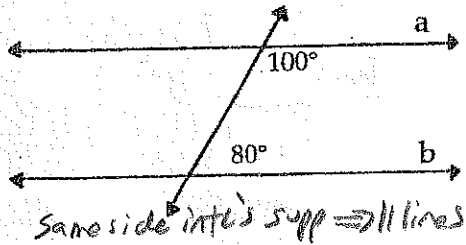
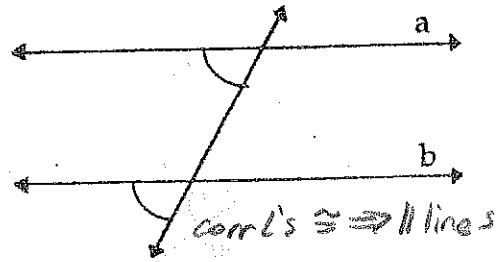
Show all work and circle your answers!!

In problems 1 - 6, state the theorem that proves  $a \parallel b$ .

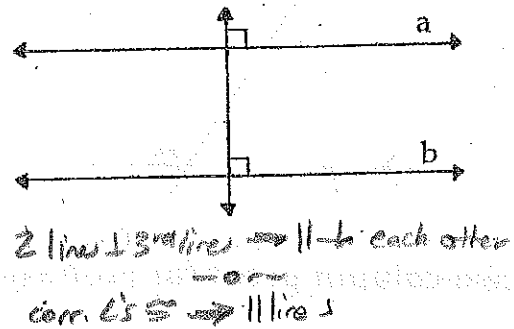
1)



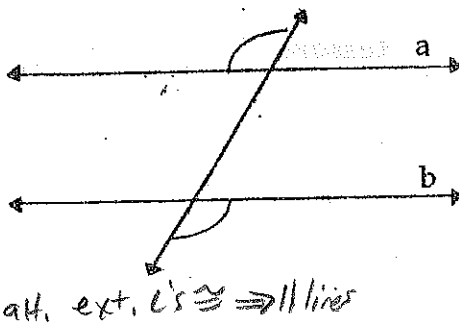
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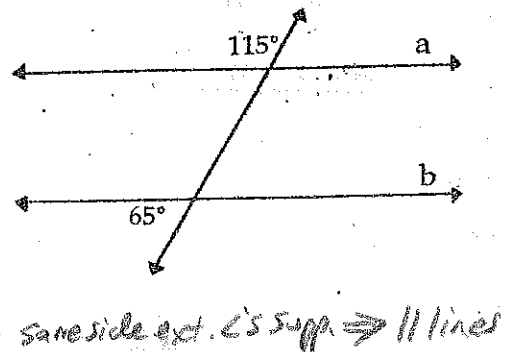
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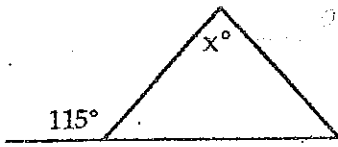
5)



6)



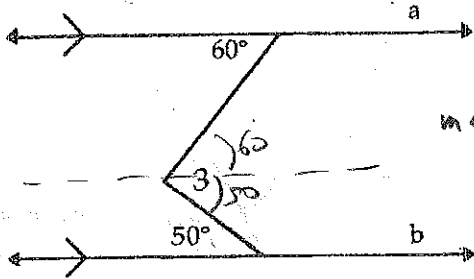
7) Complete the inequality that shows the restrictions on x.



$$0 < x < 115$$

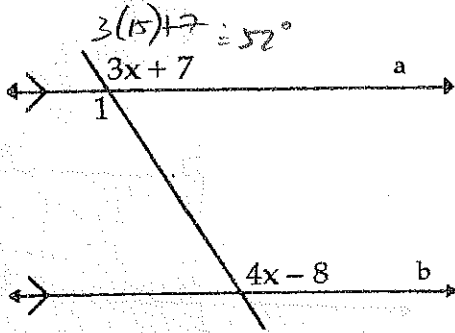
$$\underline{0} < x < \underline{115}$$

8) If  $a \parallel b$ , find  $m\angle 3$ .



$$m\angle 3 = 110^\circ$$

9) If  $a \parallel b$ , solve for x and find  $m\angle 1$ .



$$3(15) + 7 = 52^\circ$$

$$\begin{array}{r} 115 \\ - 3 \\ \hline 112 \\ + 7 \\ \hline 119 \end{array}$$

$$\begin{array}{r} 3x + 7 = 4x - 8 \\ -3x \quad -3x \\ \hline 7 = x - 8 \\ +8 \quad +8 \\ \hline 15 = x \end{array}$$

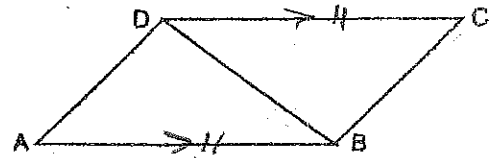
$$\boxed{x = 15}$$

$$\boxed{m\angle 1 = 52^\circ}$$

Write a two-column proof for problem 10.

10) Given:  $\overline{AB} \cong \overline{DC}$   
 $\overline{AB} \parallel \overline{DC}$

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



Statements

Reasons

1.  $\overline{AB} \cong \overline{DC}$

2.  $\overline{AB} \parallel \overline{DC}$

3.  $ABCD$  is  $\square$

4.  $\overline{AD} \cong \overline{BC}$

Q.E.D.

1. Given

2. Given

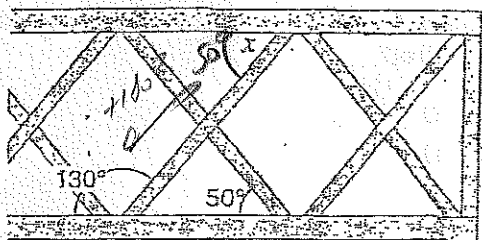
3. one pair opp. sides  $\parallel$

4.  $\square \Rightarrow$  opp. sides  $\cong$

#1. complete the table below by placing a yes or no in each empty space.

	Kite	Isosceles Trapezoid	Parallelogram	Rhombus	Rectangle
Each pair of opposite sides $\parallel$	no	no	yes	yes	yes
Opposite sides $\cong$	no	no	yes	yes	yes
Opposite $\angle$ 's $\cong$	no	no	yes	yes	yes
Diagonals bisect each other	no	no	yes	yes	yes
Diagonals $\perp$	yes	no	no	yes	no
Diagonals $\cong$	no	yes	no	No	yes

#2 George used a decorative fencing to enclose his deck.



Using the information on the diagram and assuming the top and bottom are parallel, the measure of  $\angle x$  is —

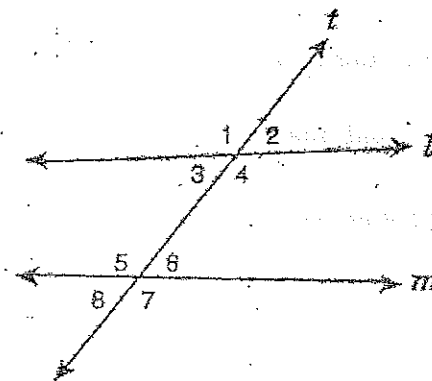
- F  $50^\circ$
- G  $80^\circ$
- H  $100^\circ$
- J  $130^\circ$

#3 Angle 1 is a complement of angle 2. If  $m\angle 1 = (14x + 8)$  and  $m\angle 2 = (8x - 6)$ , what is the value of  $x$  and of  $m\angle 1$ ?

- A  $x = 4, m\angle 1 = 26^\circ$
- B  $x = 4, m\angle 1 = 64^\circ$
- C  $x = 113.3, m\angle 1 = 121.3^\circ$
- D  $x = 113.3, m\angle 1 = 58.7^\circ$

$$\begin{aligned}
 &14x + 8 + 8x - 6 = 90 \\
 &22x + 2 = 90 \\
 &22x = 88 \quad | \quad \times 14 \\
 &x = 4 \quad \quad \times 14 \\
 &\quad \quad \quad \times 18 \\
 &\quad \quad \quad \times 64
 \end{aligned}$$

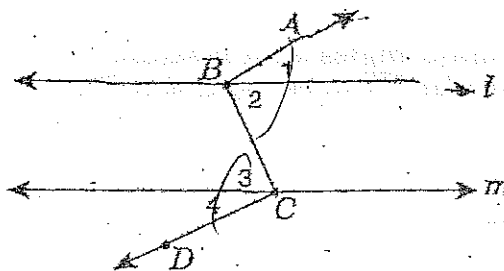
#4 In the figure, lines  $l$  and  $m$  are cut by the transversal  $t$  forming the angles shown.



$\angle 3$  and  $\angle 6$  are —

- F Vertical angles
- G Corresponding angles
- H Alternate interior angles
- J Alternate exterior angles

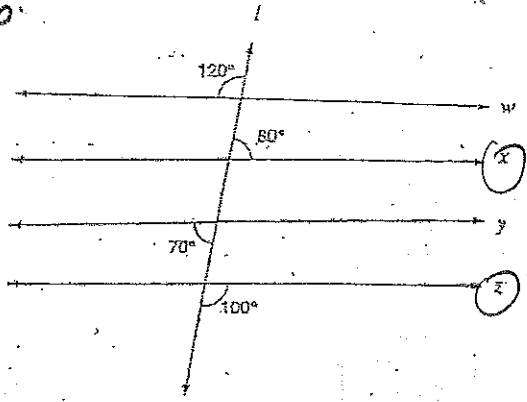
#5 Use this figure to answer the following.



$\overrightarrow{BA}$  is parallel to  $\overrightarrow{CD}$  if —

- A  $m\angle 1 = m\angle 2$
- B  $m\angle 3 = m\angle 4$
- C  $m\angle 1 + m\angle 2 = 90$
- D  $m\angle 1 + m\angle 2 = m\angle 3 + m\angle 4$

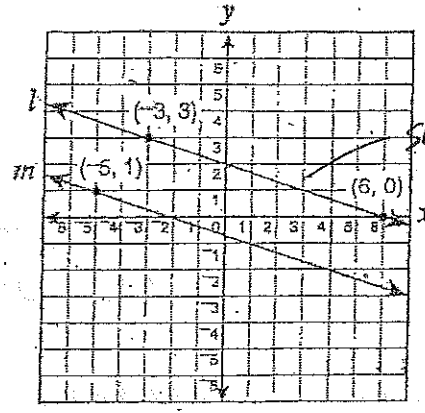
#6.



Line  $l$  intersects lines  $w$ ,  $x$ ,  $y$ , and  $z$ . Which two lines are parallel?

- F Line  $w$  and line  $x$
- G Line  $w$  and line  $y$
- H Line  $x$  and line  $z$
- I Line  $y$  and line  $z$

#8 Lines  $l$  and  $m$  contain the points shown.



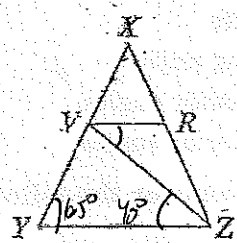
$\text{slope} = \frac{3}{-9} = -\frac{1}{3}$

$\frac{1-1}{5-1} = \frac{2}{6} = \frac{1}{3}$

Which of the following points *must* lie on line  $m$  in order for lines  $l$  and  $m$  to be parallel?

- F (0, -2)
- G (0, -1)
- H (1, -1)
- J (4, -1)

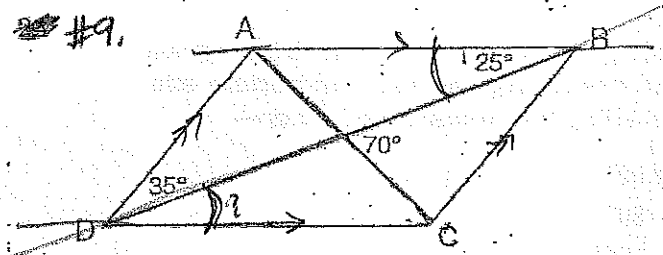
#7 The measure of  $\angle YZV$  is  $40^\circ$  and the measure of  $\angle XYZ$  is  $65^\circ$ .



Which of these angles *must* measure  $40^\circ$  in order for  $\overline{VR}$  to be parallel to  $\overline{YZ}$ ?

- A  $\angle YVZ$
- B  $\angle ZVR$
- C  $\angle ZYV$
- D  $\angle VRX$

#9.



In parallelogram  $ABCD$ , what is  $m\angle BDC$ ?

- F  $70^\circ$
- G  $45^\circ$
- H  $35^\circ$
- J  $25^\circ$

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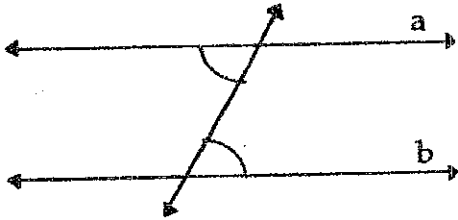
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**Geometry - ~~Quiz~~ (Lessons 5.1 through 5.3)**

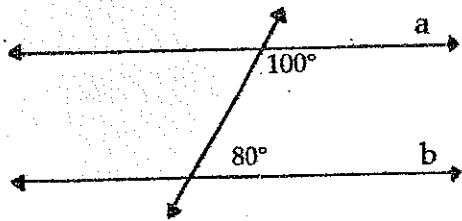
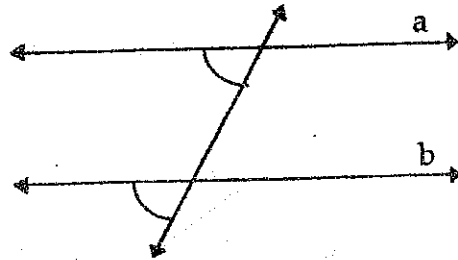
Show all work and circle your answers!!

In problems 1 - 6, state the theorem that proves  $a \parallel b$ .

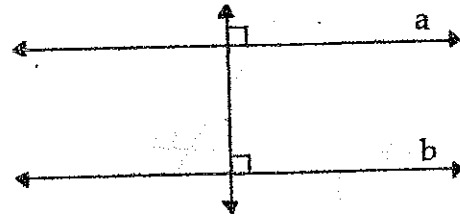
1)



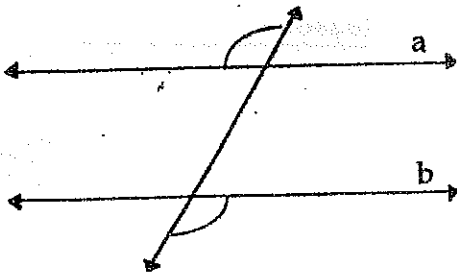
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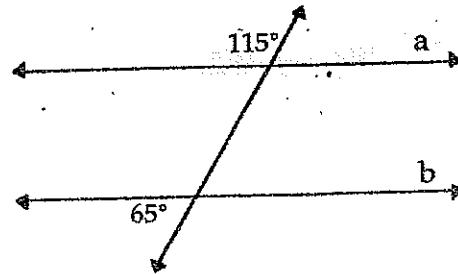
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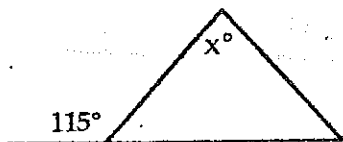
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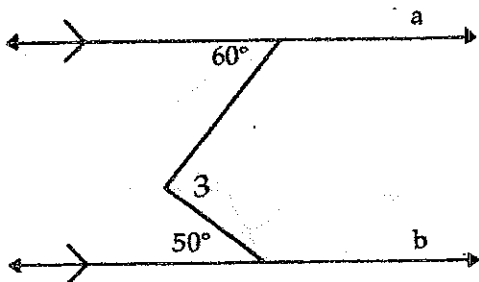


7) Complete the inequality that shows the restrictions on  $x$ .

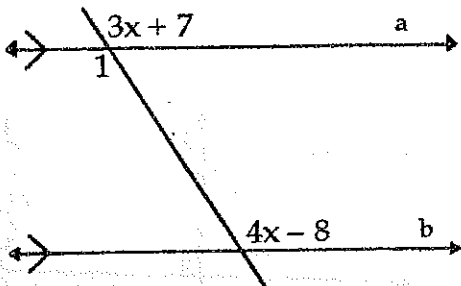


$$\underline{\hspace{2cm}} < x < \underline{\hspace{2cm}}$$

8) If  $a \parallel b$ , find  $m\angle 3$ .



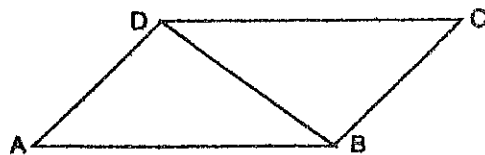
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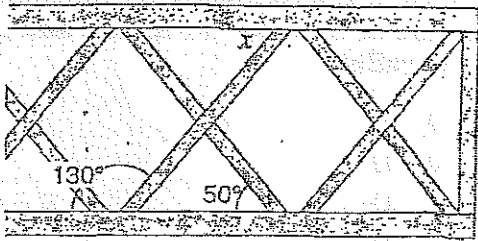
Reasons

Statements	Reasons

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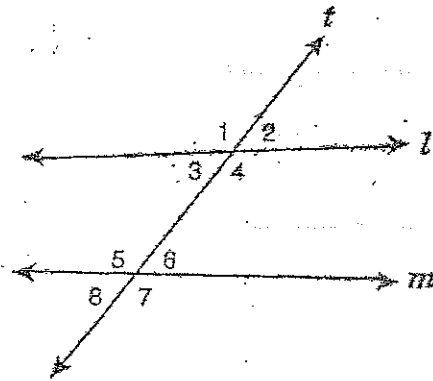
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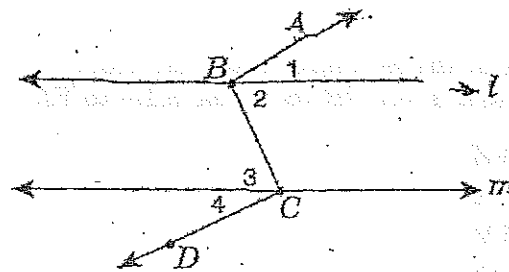
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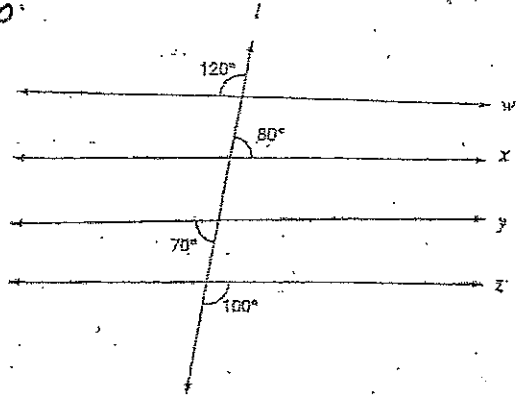
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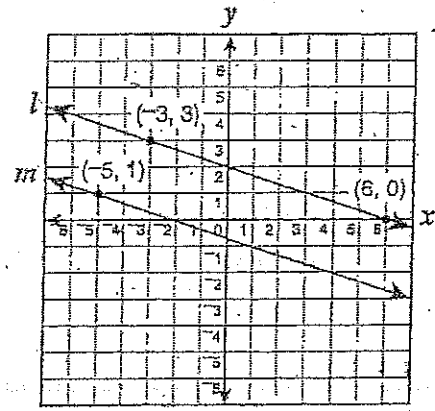
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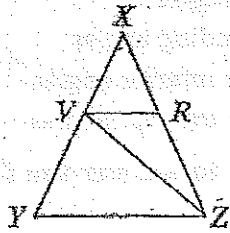
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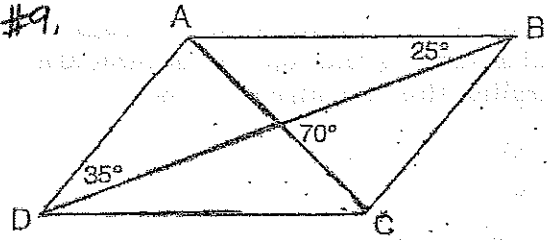
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