

HW #3-6

complete both sides of this work sheet

Name \_\_\_\_\_ Date \_\_\_\_\_

### 3.1 Puzzle Time

#### What Has A Foot On Each End And One In The Middle?

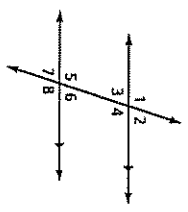
Write the letter of each answer in the box containing the exercise number.

Fill in the blank.

- Two lines are \_\_\_\_\_ if and only if they are coplanar and do not intersect.
- Two lines are \_\_\_\_\_ if and only if the slopes of the lines are opposite reciprocals of each other.
- Two lines are \_\_\_\_\_ if and only if they have exactly one point in common.
- Two lines are \_\_\_\_\_ lines when they do not intersect and are not coplanar.
- A(n) \_\_\_\_\_ is a line that intersects two or more coplanar lines at different points.

Identify the type of the pairs of angles.

- $\angle 3$  and  $\angle 5$
- $\angle 1$  and  $\angle 8$
- $\angle 2$  and  $\angle 6$
- $\angle 1$  and  $\angle 4$
- $\angle 4$  and  $\angle 5$



1	10	8	2	6	4	9	5	7	3
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Answers
G. unskew
K. intersecting
H. conditional
C. alternate exterior angles
I. transversal
T. angular
U. straight
S. skew
L. horizontal
R. perpendicular
N. lined angles
T. vertical angles
P. inverse angles
A. parallel
D. consecutive interior angles
B. revolving angles
L. converse angles
Y. alternate interior angles
M. intersecting angles
A. corresponding angles

Name \_\_\_\_\_ Date \_\_\_\_\_

### 3.2 Puzzle Time

#### What Did The Acorn Say When It Grew Up?

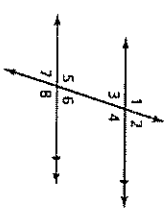
Circle the letter of each correct answer in the boxes below. The circled letters will spell out the answer to the riddle.

Complete the sentence.

- If two parallel lines are cut by a transversal, then the pairs of consecutive interior angles are \_\_\_\_\_.
- If two parallel lines are cut by a transversal, then the pairs of alternate interior angles are \_\_\_\_\_.

Using the properties of parallel lines, find the angle measure.

- $m\angle 2 = 74^\circ$ , Find  $m\angle 1$ .
- $m\angle 2 = 74^\circ$ , Find  $m\angle 3$ .
- $m\angle 1 = 114^\circ$ , Find  $m\angle 8$ .
- $m\angle 4 = 56^\circ$ , Find  $m\angle 6$ .
- $m\angle 1 = 84^\circ$ , Find  $m\angle 7$ .
- $m\angle 8 = 116^\circ$ , Find  $m\angle 2$ .



G	E	I	F	O	A	E	M
64°	124°	116°	66°	106°	transitive	complementary	congruent
T	E	I	T	R	Y	M	E
84°	74°	34°	96°	114°	supplementary	56°	116°



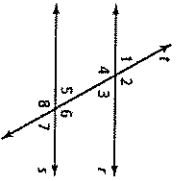
### 3.3 Puzzle Time

#### Why Did The Boy Throw His Clock Out The Window?

A	B	C	D	E	F
G					

Complete each exercise. Find the answer in the answer column. Write the word under the answer in the box containing the exercise letter.

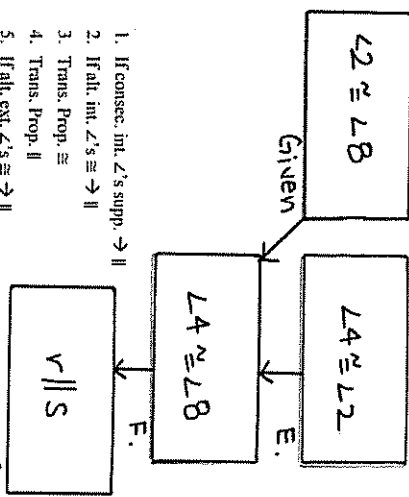
- Using the diagram, find the value of  $x$  that makes  $r$  parallel to  $s$ .
- A.  $m\angle 1 = 30^\circ$  and  $m\angle 7 = (2x + 10)^\circ$
- B.  $m\angle 4 = 135^\circ$  and  $m\angle 5 = (4x - 3)^\circ$
- C.  $m\angle 2 = 124^\circ$  and  $m\angle 6 = (4x + 4)^\circ$
- D.  $m\angle 3 = 24^\circ$  and  $m\angle 5 = (2x + 2)^\circ$



Use the diagram above to complete the proof. Use the chart to identify the reasons.

Given:  $\angle 2 \cong \angle 8$  Prove:  $r \parallel s$

11	TO
13	PLANE
77	BREAK
6	SEE
4	AN
5	BIRD
70	THE
12	HE

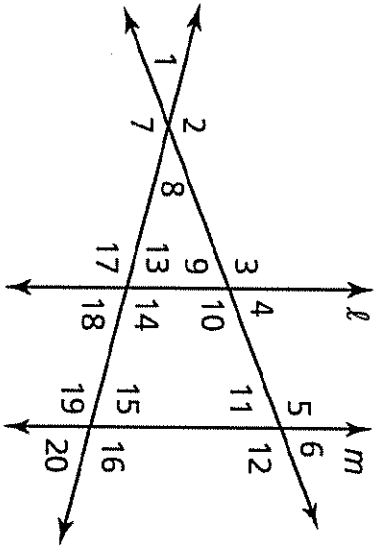


- If consec. int.  $\angle$ 's supp.  $\rightarrow \parallel$
- If alt. int.  $\angle$ 's  $\cong \rightarrow \parallel$
- Trans. Prop.  $\cong$
- Trans. Prop.  $\parallel$
- If alt. ext.  $\angle$ 's  $\cong \rightarrow \parallel$
- If vert.  $\angle$ 's  $\rightarrow \angle$ 's  $\cong$
- If corresp.  $\angle$ 's  $\cong \rightarrow \parallel$

7	FLY
3	TIME
30	WANTED
1	TAKE
2	FOREVER
10	BECAUSE
$34\frac{1}{2}$	SOUND
9	HOLD

Given:  $l \parallel m$   
 $m\angle 1 = 35^\circ$   
 $m\angle 12 = 111^\circ$

Find the measures of ALL numbered angles in the diagram. (HINT: the sum of all angles in a TRIANGLE is  $180^\circ$ )



- $m\angle 2 =$  \_\_\_\_\_  $m\angle 11 =$  \_\_\_\_\_
- $m\angle 3 =$  \_\_\_\_\_  $m\angle 13 =$  \_\_\_\_\_
- $m\angle 4 =$  \_\_\_\_\_  $m\angle 14 =$  \_\_\_\_\_
- $m\angle 5 =$  \_\_\_\_\_  $m\angle 15 =$  \_\_\_\_\_
- $m\angle 6 =$  \_\_\_\_\_  $m\angle 16 =$  \_\_\_\_\_
- $m\angle 7 =$  \_\_\_\_\_  $m\angle 17 =$  \_\_\_\_\_
- $m\angle 8 =$  \_\_\_\_\_  $m\angle 18 =$  \_\_\_\_\_
- $m\angle 9 =$  \_\_\_\_\_  $m\angle 19 =$  \_\_\_\_\_
- $m\angle 10 =$  \_\_\_\_\_  $m\angle 20 =$  \_\_\_\_\_