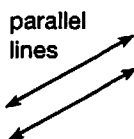
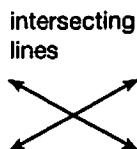




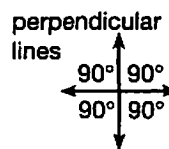
SKILL 2: Parallel and Perpendicular Lines



parallel lines



intersecting lines



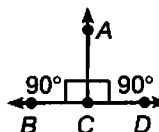
perpendicular lines

Two lines in the same plane that never cross are **parallel** lines.

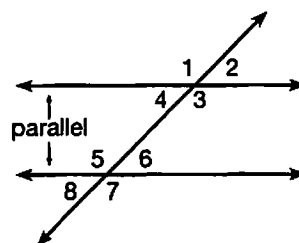
Two lines that cross are **intersecting** lines.

Two intersecting lines that form four right angles are **perpendicular** lines.

Remember that the measure of a right angle is 90° . In symbols, $m\angle ACD = 90^\circ$ and $m\angle ACB = 90^\circ$. Angles that have the same measure are **congruent**. We write $\angle ACD \cong \angle ACB$.



When two parallel lines are intersected by a third line, pairs of congruent angles are formed. Here are some pairs of congruent angles.

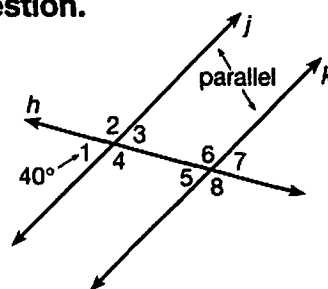


Alternate Interior Angles	$\angle 3 \cong \angle 5, \angle 4 \cong \angle 6$
Corresponding Angles	$\angle 1 \cong \angle 5, \angle 2 \cong \angle 6,$ $\angle 3 \cong \angle 7, \angle 4 \cong \angle 8$
Vertical Angles	$\angle 1 \cong \angle 3, \angle 2 \cong \angle 4,$ $\angle 5 \cong \angle 7, \angle 6 \cong \angle 8$

Example

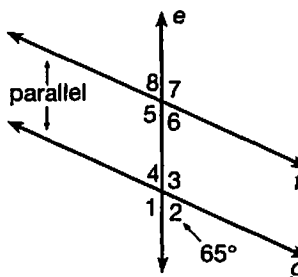
Lines j and k are parallel, and $m\angle 1 = 40^\circ$. Answer each question.

- Name the other angles that have a measure of 40° .
 $\angle 3, \angle 5,$ and $\angle 7$ have the same measure as $\angle 1$.
So $\angle 3, \angle 5,$ and $\angle 7$ have a measure of 40° .
- Find the measure of $\angle 6$. $\angle 6$ and $\angle 5$ are supplementary. From part a you know that $m\angle 5 = 40^\circ$.
 $m\angle 6 + 40^\circ = 180^\circ$. So, $m\angle 6 = 180^\circ - 40^\circ$
and $m\angle 6 = 140^\circ$.



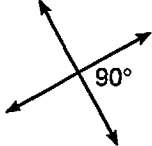
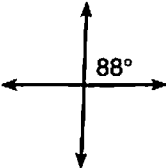
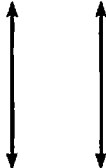
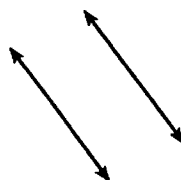
Guided Practice

- Name the two parallel lines. _____
- If $m\angle 2 = 65^\circ$, then $m\angle 8 =$ _____.
- If $m\angle 2 = 65^\circ$, then $m\angle 7 =$ _____.



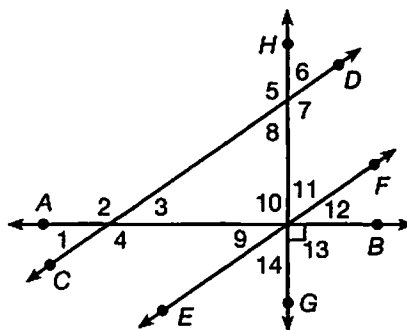
SKILL 2: Practice

Indicate if each pair of lines appears to be parallel, perpendicular, or neither. Each pair of lines is in the same plane.

1.  _____
2.  _____
3.  _____
4.  _____

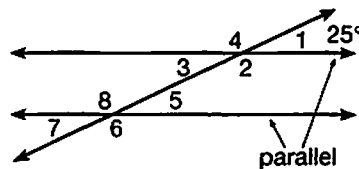
Use the figure to name each pair of lines or angles.

5. a pair of parallel lines _____
6. a pair of perpendicular lines _____
7. a pair of supplementary angles _____
8. a pair of congruent angles _____
9. a pair of complementary angles _____

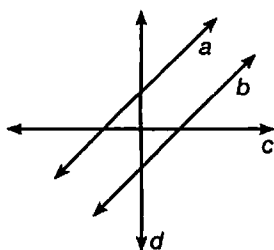


10. In the figure, a line intersects two parallel lines. One angle measure is given. Find each of the other angle measures.

$m\angle 1 = 25^\circ$	$m\angle 5 =$ _____
$m\angle 2 =$ _____	$m\angle 6 =$ _____
$m\angle 3 =$ _____	$m\angle 7 =$ _____
$m\angle 4 =$ _____	$m\angle 8 =$ _____



11. Which lines appear to be perpendicular?



- | | |
|------------------|------------------|
| A a and b | C c and d |
| B b and c | D b and d |

Skill 2

12. What is the measure of the complement of a 72° angle?

Skill 1

- | | |
|---------------------|----------------------|
| F 18° | H 108° |
| G 28° | J 118° |