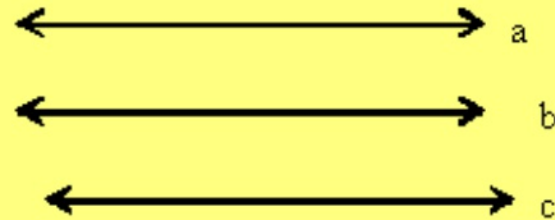Goal: To learn and apply theorems relating to parallel and perpendicular lines.

3-3 Parallel and Perpendicular Lines

Theorem 3-9:
If two lines are parallel to the same line, then they are parallel to each other.
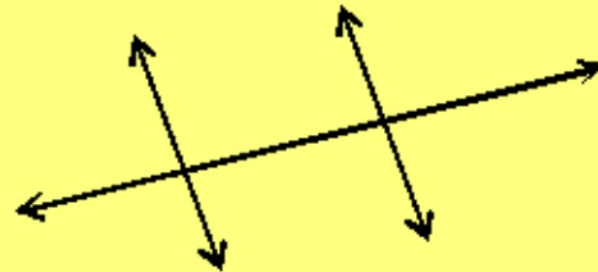
a || b

Theorem 3-10:
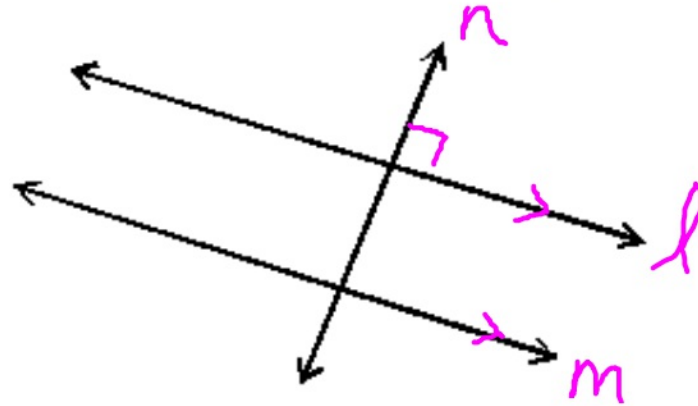In a plane, if two lines are perpendicular to the same line, then they are parallel to each other.

m || n

Theorem 3-11:

In a plane, if a line is perpendicular to one of two parallel lines, then it is also perpendicular to the other.
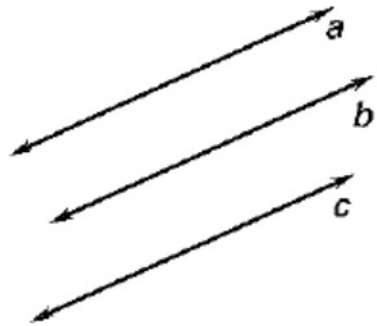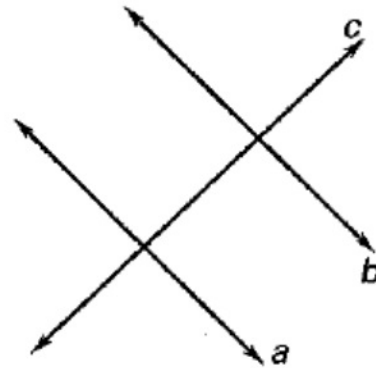
$n \perp m$

Goal: To learn and apply theorems relating to parallel and perpendicular lines.

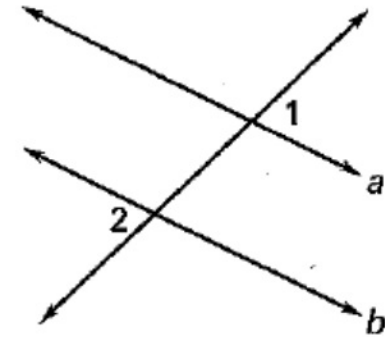**State the postulate or theorem that allows you to conclude that $a \parallel b$.**

1. Given: $a \parallel c, b \parallel c$

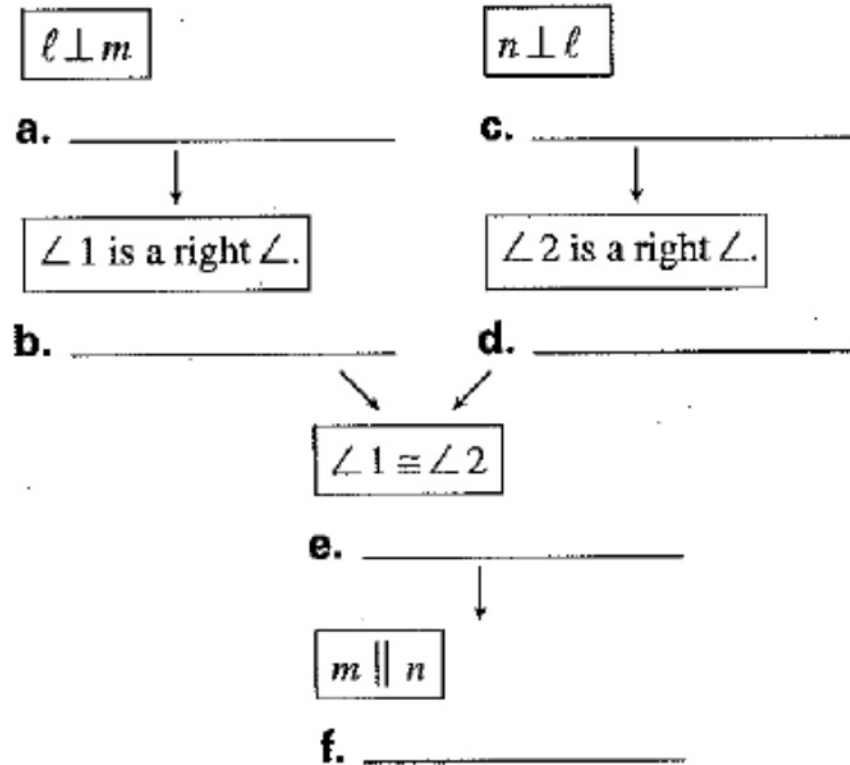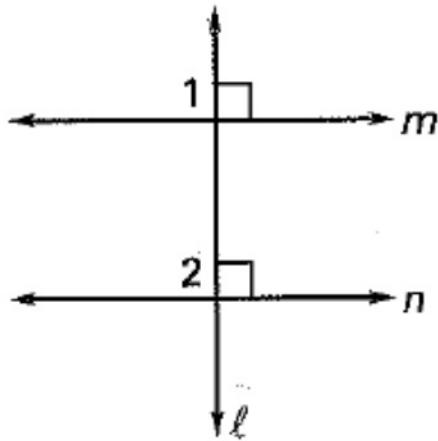**2.** Given: $a \perp c, b \perp c$

3. Given: $\angle 1 \cong \angle 2$

Flow Proof

Given: $m \perp \ell$, $n \perp \ell$

Prove: $m \parallel n$

$\boxed{\ell \perp m}$

a. _____

$\downarrow$

$\boxed{\angle 1 \text{ is a right } \angle.}$

b. _____

$\boxed{n \perp \ell}$

c. _____

$\downarrow$

$\boxed{\angle 2 \text{ is a right } \angle.}$

d. _____

$\boxed{\angle 1 \cong \angle 2}$

e. _____

$\downarrow$

$\boxed{m \parallel n}$

f. _____

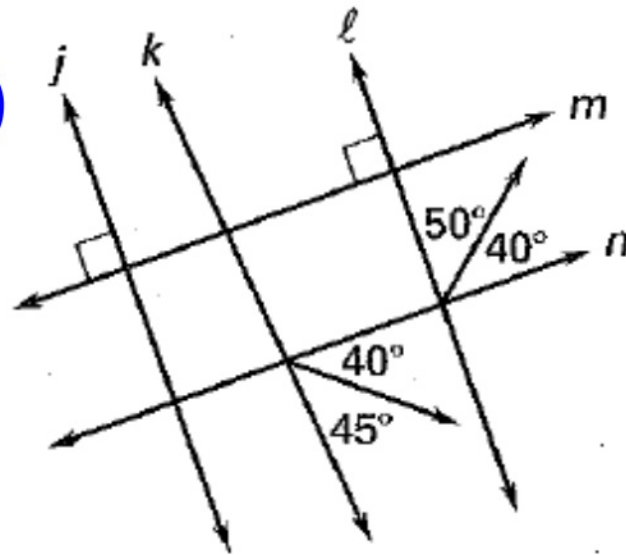# Determine which lines, if any, must be parallel.

1.)
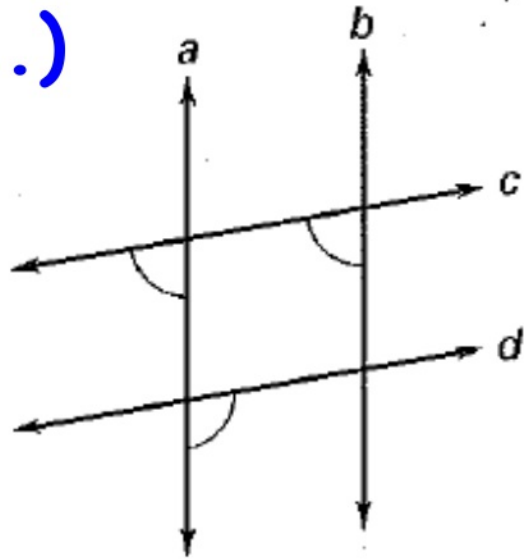
2.)
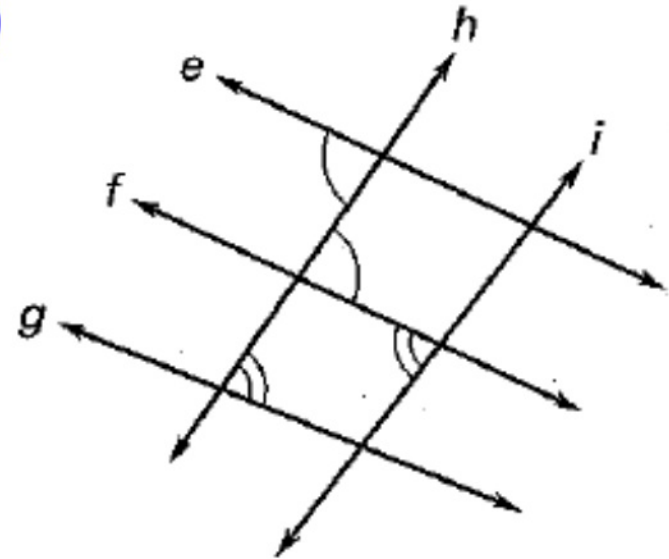
3.)

Parallel & Perpendicular Lines

HSG-CO.A.1

Goal: To learn and apply theorems relating to parallel and perpendicular lines.

Handout
in Blackboard