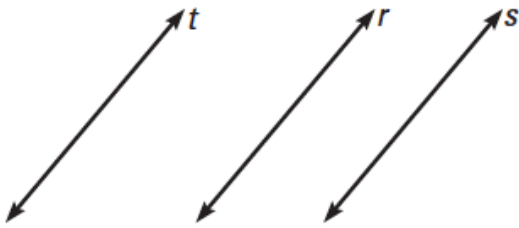# Assignment for 3-3 Parallel and Perpendicular Lines

Complete on separate paper!!!
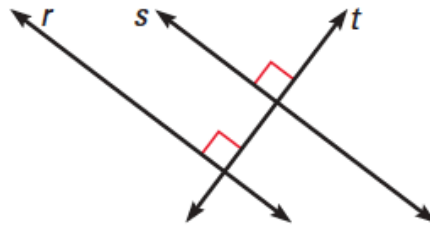
1. Name two ways, from this lesson, to prove that two lines are parallel.

State the theorem that you can use to prove that _r_ is parallel to _s_.
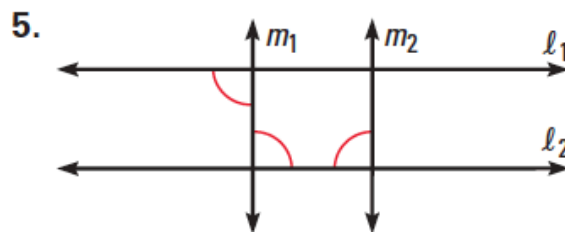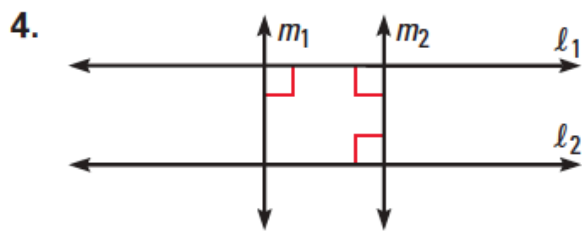
2. GIVEN ▶ $r \parallel t, t \parallel s$

3. GIVEN ▶ $r \perp t, t \perp s$

Determine which lines, if any, must be parallel. Explain your reasoning.

4.

m_1 m_2 ℓ_1
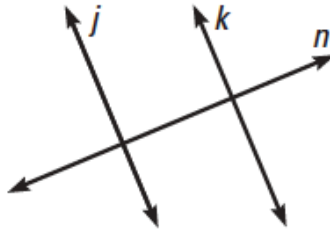
ℓ_2

5.

m_1 m_2 ℓ_1

ℓ_2

LOGICAL REASONING State the postulate or theorem that allows you to conclude that $j \parallel k$.

8. GIVEN ▶ $j \parallel n, k \parallel n$

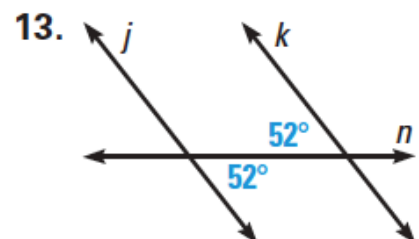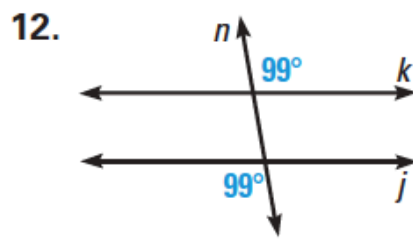j k n

9. GIVEN ▶ $j \perp n, k \perp n$
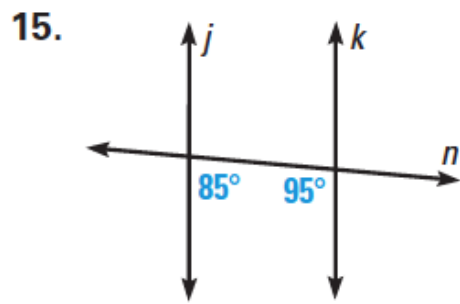
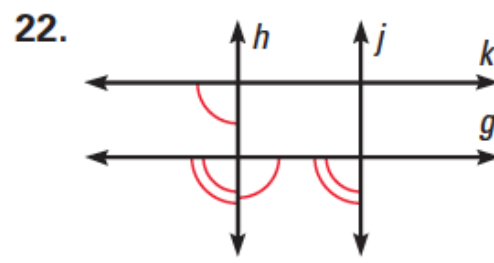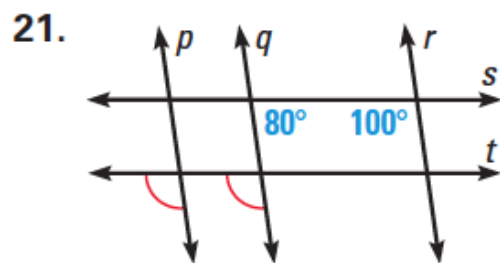j k n

10. GIVEN ▶ $\angle 1 \cong \angle 2$

j k
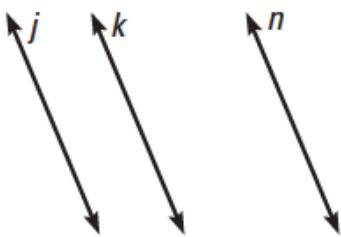
1
2
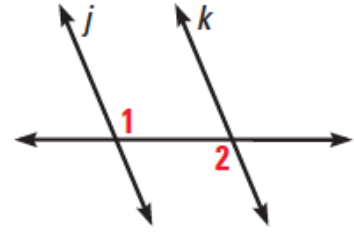
SHOWING LINES ARE PARALLEL Explain how you would show that $k \parallel j$. State any theorems or postulates that you would use.

11.

n 112° k

112°

j

12.

n 99° k

99° j

13.

j k

52° n

52°

SHOWING LINES ARE PARALLEL Explain how you would show that $k \parallel j$.

15.

85° 95°

16.

35°
55°

17.

2
1 3
4
135°
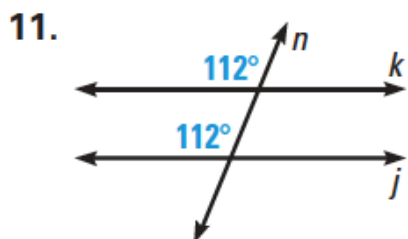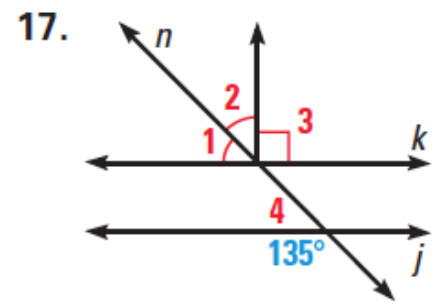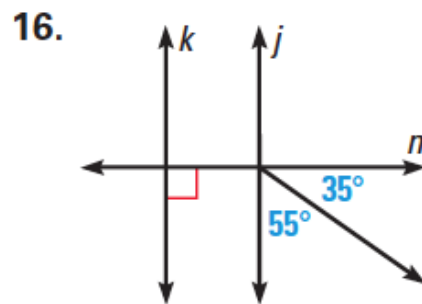
NAMING PARALLEL LINES Determine which lines, if any, must be parallel. Explain your reasoning.

21.

80° 100°

22.

30. 🌐 **FOOTBALL FIELD** The white lines along the long edges of a football field are called *sidelines*. *Yard lines* are perpendicular to the sidelines and cross the field every five yards. Explain why you can conclude that the yard lines are parallel.
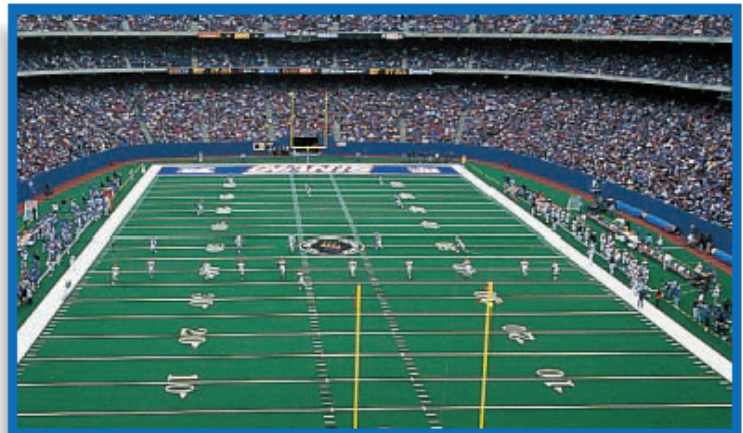
31. 🌐 **HANGING WALLPAPER** When you hang wallpaper, you use a tool called a *plumb line* to make sure one edge of the first strip of wallpaper is vertical. If the edges of each strip of wallpaper are parallel and there are no gaps between the strips, how do you know that the rest of the strips of wallpaper will be parallel to the first?