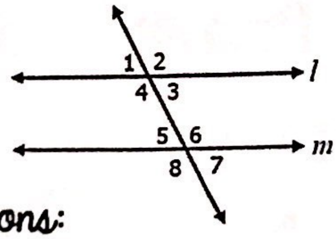
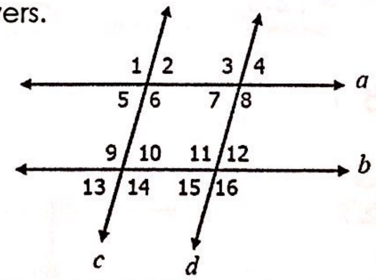


Proving Lines Parallel

You can prove lines are parallel by the following reasons:

Corresponding Angles Converse	If two lines are cut by a transversal so that **corresponding angles** are **congruent**, then the lines are parallel. **Example:** If <1 ≅ <5, then l // m
Alternate Interior Angles Converse	If two lines are cut by a transversal so that **alternate interior angles** are **congruent**, then the lines are parallel. **Example:** If <4 ≅ <6, then l // m
Alternate Exterior Angles Converse	If two lines are cut by a transversal so that **alternate exterior angles** are **congruent**, then the lines are parallel. **Example:** If <1 ≅ <7, then l // m
Same Side Interior Angles Converse	If two lines are cut by a transversal so that **same side interior angles** are **supplementary**, then the lines are parallel. **Example:** If m<4 + m<5 = 180, then l // m

Practice! Given the following information, determine which lines, if any, are parallel. State the converse that justifies your answers.



Given	Parallel Lines	Converse
a. $\angle 2 \cong \angle 4$	c // d	corresponding < conv
b. $\angle 5 \cong \angle 10$	a // b	alt. int. < conv.
c. $m\angle 6 + m\angle 10 = 180$	a // b	SSI < conv.
d. $\angle 1 \cong \angle 14$	a // b	alt. ext < conv
e. $m\angle 14 + m\angle 15 = 180$	c // d	SSI < conv
f. $\angle 11 \cong \angle 16$	N/A vertical	—
g. $\angle 4 \cong \angle 15$	c // d	alt. ext < conv.
h. $\angle 10 \cong \angle 12$	c // d	corresp. < conv.
i. $m\angle 9 + m\angle 13 = 180$	N/A Linear pair	—
j. $\angle 2 \cong \angle 7$	c // d	alt. int < conv
k. $\angle 6 \cong \angle 11$	N/A	—

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