

## Worksheet Parallel Line Proofs #1

1) Statements

- 1)  $v \parallel w$
- 2)  $\angle 2 \cong \angle 3$
- 3)  $\angle 2 \cong \angle 1$

4)  $\angle 1 \cong \angle 3$

Reasons

- 1) Given
- 2) Given
- 3) IF two lines are  $\parallel$  + cut by trans, then alt. ext.  $\angle$ 's are  $\cong$
- 4) Trans. Prop. of  $\cong$

2) Statements

- 1)  $\overleftrightarrow{OP} \parallel \overleftrightarrow{QR}$
- 2)  $\overleftrightarrow{OP}$  bisects  $\angle AOC$
- 3)  $\overleftrightarrow{QR}$  bisects  $\angle BOC$

- 4)  $\angle 1 \cong \angle 2$
- 5)  $\angle 3 \cong \angle 4$
- 6)  $\angle 2 \cong \angle 3$
- 7)  $\angle 1 \cong \angle 4$

Reasons

- 1) Given
- 2) Given
- 3) Given
- 4) def. of  $\angle$  bisector
- 5) def. of  $\angle$  bisector
- 6) IF two lines are  $\parallel$  + cut by trans, then alt. int.  $\angle$ 's are  $\cong$
- 7) Trans prop. of  $\cong$

3) Statements

- 1)  $\overleftrightarrow{AB} \parallel \overleftrightarrow{ED}$
- 2)  $\angle 4 \cong \angle 5$
- 3)  $\angle 2 \cong \angle 4$

4)  $\angle 1 \cong \angle 5$

5)  $\angle 1 \cong \angle 2$

Reasons

- 1) Given
- 2) Given
- 3) IF two lines are  $\parallel$  + cut by trans, then alt. int.  $\angle$ 's are  $\cong$
- 4) IF two lines are  $\parallel$  + cut by trans, then corresp.  $\angle$ 's are  $\cong$
- 5) Trans prop. of  $\cong$

→ can also use corresponding  $\angle$ 's!

4) Statements

1)  $\overline{AB} \parallel \overline{GE}$

2)  $\angle 1 \cong \angle 8$

3)  $\angle 8 \cong \angle 3$

4)  $\angle 3 \cong \angle 6$

5)  $\angle 1 \cong \angle 7$

6)  $\angle 7 \cong \angle 4$

7)  $\angle 6 \cong \angle 4$

Reasons

1) Given

2) Given

3) IF two lines are  $\parallel$  + cut by trans, then cut int.  $\angle$ 's are  $\cong$

4) vertical  $\angle$ 's are  $\cong$

5) IF two lines are  $\parallel$  + cut by trans, then cut. int.  $\angle$ 's are  $\cong$

6) vertical  $\angle$ 's are  $\cong$

7) Trans prop of  $\cong$

5) Statements

1)  $\overline{AB} \parallel \overline{FE}$

2)  $\overline{BC} \parallel \overline{DF}$

3)  $\angle 1 \cong \angle 2$

4)  $\angle 2 \cong \angle 3$

5)  $\angle 1 \cong \angle 3$

Reasons

1) Given

2) Given

3) IF two lines are  $\parallel$  + cut by a trans, then cut. int.  $\angle$ 's are  $\cong$

4) IF two lines are  $\parallel$  + cut by a trans, then cut. int.  $\angle$ 's are  $\cong$

5) Trans. Prop of  $\cong$

## Worksheet Parallel Line Proofs #2

1) Statements	Reasons
1) $\vec{CE} \parallel \vec{AB}$	1) Given
2) $\angle A \cong \angle 2$	2) Given
3) $\angle A \cong \angle 1$	3) IF two lines are $\parallel$ + cut by a trans, then corresponding $\angle$ 's are $\cong$
4) $\angle 1 \cong \angle 2$	4) Trans prop of $\cong$

2) Statements	Reasons
1) $\vec{AB}$ bisects $\angle CAD$	1) Given
2) $\vec{CB} \parallel \vec{AB}$	2) Given
3) $\angle 2 \cong \angle 3$	3) Def. of $\angle$ bisector
4) $\angle 3 \cong \angle 1$	4) IF two lines are parallel + cut by a trans, then alt. int. $\angle$ 's are $\cong$
5) $\angle 1 \cong \angle 2$	5) Trans prop of $\cong$

3) Statements	Reasons
1) $\vec{AC} \parallel \vec{DF}$	1) Given
2) $\vec{AB} \parallel \vec{FE}$	2) Given
3) $\angle 2 \cong \angle 3$	3) Given
4) $\angle 1 \cong \angle 2$	4) IF two lines are $\parallel$ + cut by a trans, then alt. int. $\angle$ 's are $\cong$
5) $\angle 3 \cong \angle 4$	5) IF two lines $\parallel$ + cut by trans then alt. int. $\angle$ 's are $\cong$
6) $\angle 1 \cong \angle 4$	6) Trans prop. of $\cong$

4) Statements

1)  $\overline{AB} \parallel \overline{CD}$

2)  $\overline{FC} \parallel \overline{BE}$

3)  $\overline{CF}$  bisects  $\triangle ACD$

4)  $\angle 2 \cong \angle 3$

5)  $\angle 3 \cong \angle 1$

6)  $\angle 2 \cong \angle 4$

7)  $\angle 1 \cong \angle 4$

Reasons

1) Given

2) Given

3) Given

4) def. of  $\angle$  bisector

5) IF two lines are  $\parallel$  + cut by trans, then alt. int.  $\angle$ 's are  $\cong$

6) IF two lines are  $\parallel$  + cut by trans, then corresp.  $\angle$ 's are  $\cong$

7) Trans prop.

5) Statements

1)  $\overline{AB} \parallel \overline{BT}$

2)  $\angle 3 \cong \angle 4$

3)  $\angle 2 \cong \angle 3$

4)  $\angle 1 \cong \angle 4$

5)  $\angle 1 \cong \angle 2$

Reasons

1) Given

2) Given

3) IF two lines are parallel + cut by a trans, then alt. int.  $\angle$ 's are  $\cong$

4) IF two lines are parallel + cut by a trans, then corresp.  $\angle$ 's are  $\cong$

5) Trans prop of  $\cong$