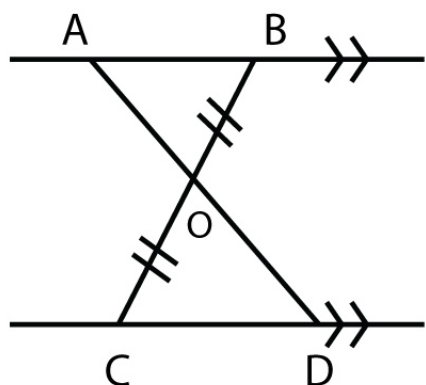


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Parallel lines and Congruent Triangles Worksheet

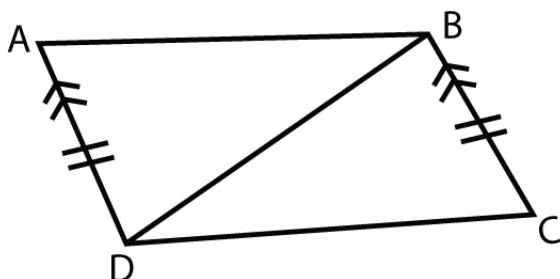
1 Prove which of the following triangles are congruent by filling in the missing blanks



Given $\overline{CO} \cong \overline{BO}$ and $\overleftrightarrow{AB} \parallel \overleftrightarrow{CD}$

	Statements	Reasons
1.	$\overline{CO} \cong \overline{BO}$	
2.	$\overleftrightarrow{AB} \parallel \overleftrightarrow{CD}$	
3.		
4.		
5.	$\triangle ABO \cong \triangle DCO$	

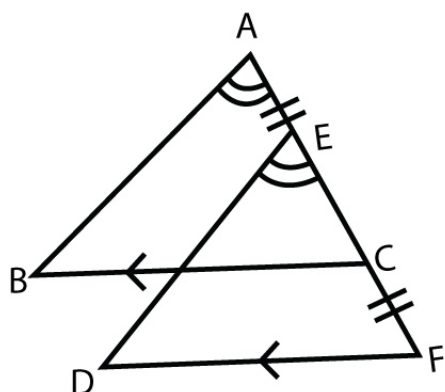
2



Given $AD \cong CB$ and $\overleftrightarrow{AD} \parallel \overleftrightarrow{CB}$

	Statements	Reasons
1.	$\overline{AD} \cong \overline{CB}$	
2.	$\overleftrightarrow{AD} \parallel \overleftrightarrow{CB}$	
3.	$\angle ADB \cong \angle CBD$	
4.		
5.	$\triangle DAB \cong \triangle BCD$	

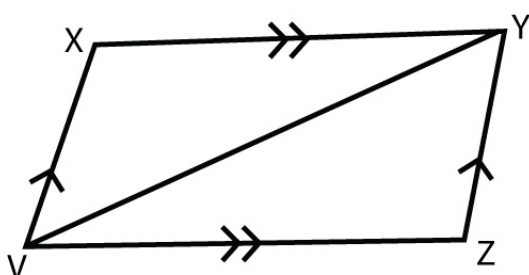
3



Given $AE \cong CF$, $\angle BAC \cong \angle DEF$ and $\overleftrightarrow{BC} \parallel \overleftrightarrow{DF}$

	Statements	Reasons
1.	$AE \cong CF$	
2.	$\overleftrightarrow{BC} \parallel \overleftrightarrow{DF}$	
3.	$\angle BAC \cong \angle DEF$	
4.		
5.	$\triangle BAC \cong \triangle DEF$	

4



Given $\overleftrightarrow{XY} \parallel \overleftrightarrow{ZV}$ and $\overleftrightarrow{XV} \parallel \overleftrightarrow{YZ}$

	Statements	Reasons
1.	$\overleftrightarrow{XY} \parallel \overleftrightarrow{ZV}$	
2.	$\overleftrightarrow{XV} \parallel \overleftrightarrow{YZ}$	
3.		
4.		
5.	$\triangle XYV \cong \triangle ZVY$	

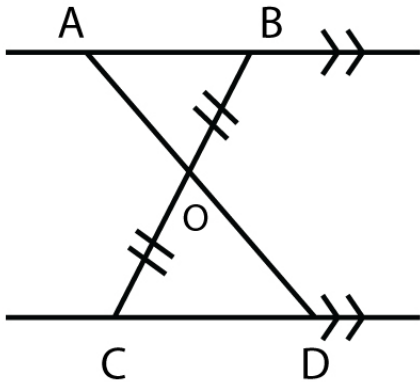
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Parallel lines and Congruent Triangles Worksheet

1

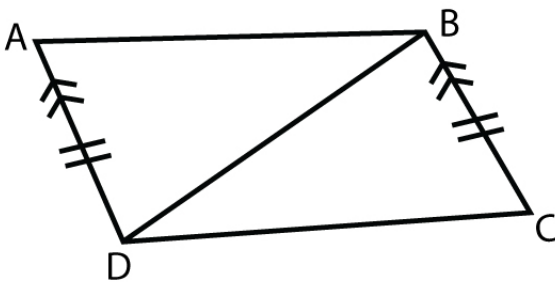
Answers



Given $\overline{CO} \cong \overline{BO}$ and $\overleftrightarrow{AB} \parallel \overleftrightarrow{CD}$

	Statements	Reasons
1.	$CO \cong BO$	Given
2.	$\overleftrightarrow{AB} \parallel \overleftrightarrow{CD}$	Given
3.	$AO \cong DO$	$AB \parallel CD, CO \cong BO$
4.	$\angle AOB \cong \angle COD$	Vertically Opposite Angles (VOAs)
5.	$\triangle ABO \cong \triangle DCO$	SAS

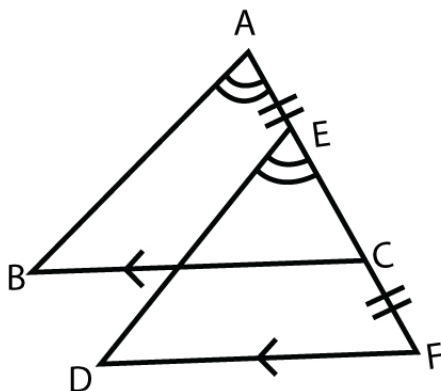
2



Given $AD \cong CB$ and $\overleftrightarrow{AD} \parallel \overleftrightarrow{CB}$

	Statements	Reasons
1.	$\overline{AD} \cong \overline{CB}$	Given
2.	$\overleftrightarrow{AD} \parallel \overleftrightarrow{CB}$	Given
3.	$\angle ADB \cong \angle CBD$	Alternate angles (DB is a transversal)
4.	$DB \cong DB$	Common
5.	$\triangle DAB \cong \triangle DCB$	SAS

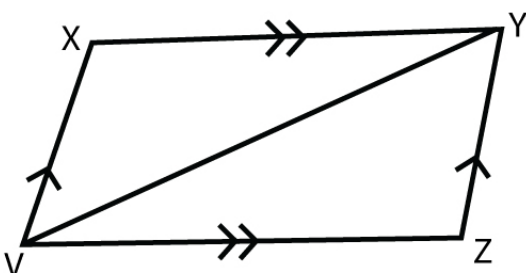
3



Given $AE \cong CF$, $\angle BAC \cong \angle DEF$ and $\overleftrightarrow{BC} \parallel \overleftrightarrow{EF}$

	Statements	Reasons
1.	$AE \cong CF$	Given
2.	$\overleftrightarrow{BC} \parallel \overleftrightarrow{EF}$	Given
3.	$\angle BAC \cong \angle DEF$	Given
4.	$\angle ACB \cong \angle EFD$	$BC \parallel EF, AE \cong CF, \& \text{amp; } EC = EC$ (Common)
5.	$\triangle BAC \cong \triangle DEF$	ASA

4



Given $\overleftrightarrow{XY} \parallel \overleftrightarrow{ZV}$ and $\overleftrightarrow{XV} \parallel \overleftrightarrow{YZ}$

	Statements	Reasons
1.	$\overleftrightarrow{XY} \parallel \overleftrightarrow{ZV}$	Given
2.	$\overleftrightarrow{XV} \parallel \overleftrightarrow{YZ}$	Given
3.	$\angle XVY \cong \angle ZYV$	Alternate angles (VY is a transversal)
4.	$VY \cong VY$	Common
5.	$\triangle XVY \cong \triangle ZYV$	SAS