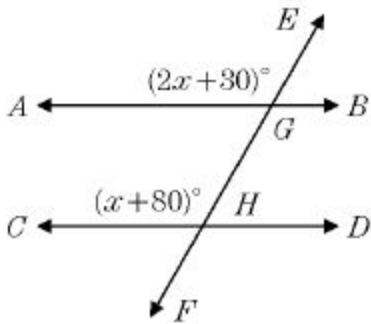


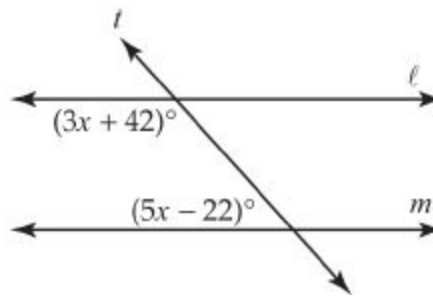
**Geometric Properties**

Solve for  $x$ .

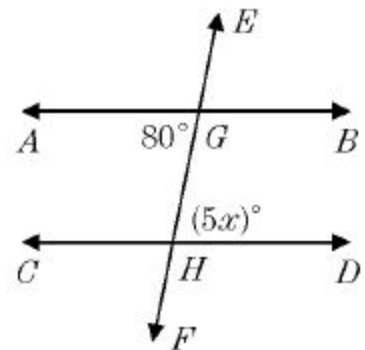
1.



2.

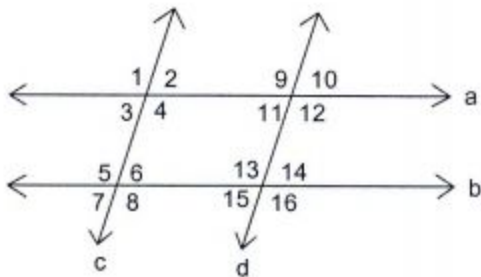


3.

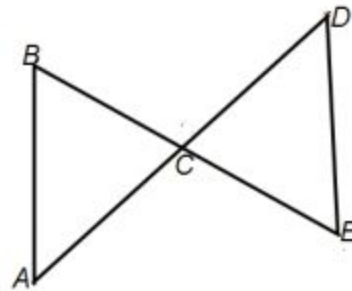


**Proofs with Lines and Triangles**

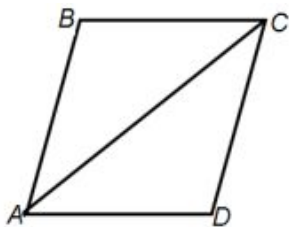
4. Given:  $a \parallel b$  and  $c \parallel d$   
 Prove:  $\angle 1 \cong \angle 16$



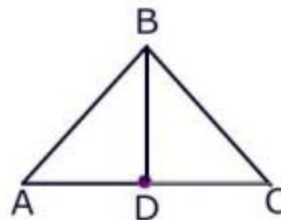
5. Given: C is the midpoint of  $\overline{BE}$ ,  $\angle A \cong \angle D$   
 Prove:  $\triangle ABC \cong \triangle DEC$



6. Given:  $\overline{BC} \cong \overline{DA}$ ,  $\overline{AC}$  bisects  $\angle BCD$   
 Prove:  $\triangle ABC \cong \triangle CDA$

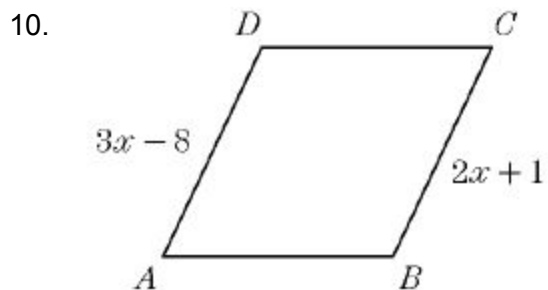
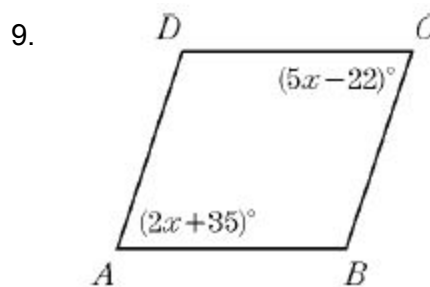
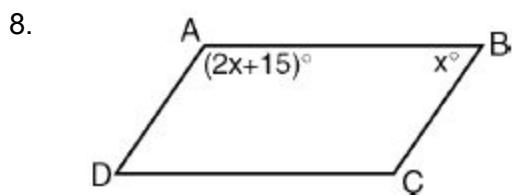


7. Given:  $\overline{BD} \perp \overline{AC}$ ,  $\overline{BA} \cong \overline{BC}$   
 Prove:  $\triangle BAD \cong \triangle BCD$

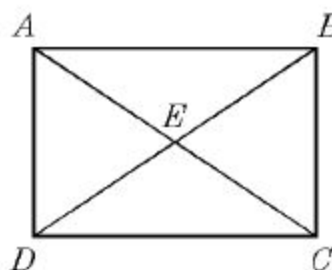


**Properties of Parallelograms**

Solve for  $x$ .

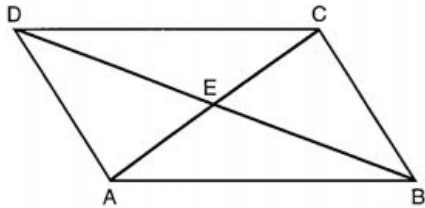


11.  $BD = 8x + 4$  and  $BE = 22$



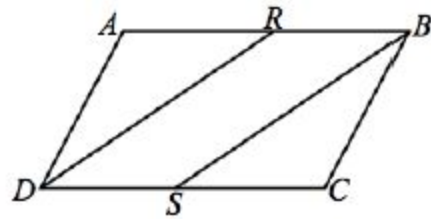
## Proofs with Parallelograms

12. Given: ABCD is a parallelogram  
 Prove:  $\triangle DEA \cong \triangle BEC$



Statement:	Reason:
1.	1. Given
2. $\overline{DA} \cong \overline{CB}$	2.
3. $\angle DAC \cong \angle BCA$	3.
4.	4. Vertical angles
5. $\triangle DEA \cong \triangle BEC$	5.

13. Given: ABCD is a parallelogram,  $\overline{AR} \cong \overline{CS}$   
 Prove:  $\triangle ARD \cong \triangle CSB$



Statement:	Reason:
1.	1. Given
2. $\overline{AD} \cong \overline{CB}$	2.
3. $\angle DAB \cong \angle BCD$	3.
4. $\triangle ARD \cong \triangle CSB$	4.

14. Given: ABCD is a parallelogram  
 Prove:  $\angle DAC \cong \angle BCA$



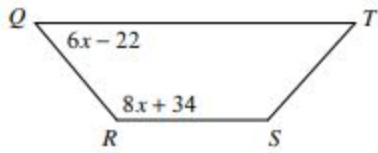
Statement:	Reason:
1. ABCD is a parallelogram	1.
2. $\overline{AD} \cong \overline{BC}$	2.
3.	3. Opposite sides of parallelogram are congruent.
4.	4. Reflexive property
5. $\triangle DAC \cong \triangle BCA$	5.
6. $\angle DAC \cong \angle BCA$	6.

**Properties of Quadrilaterals**

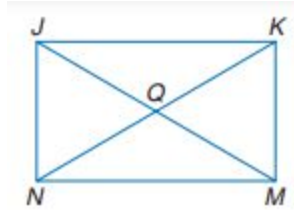
Solve for  $x$  (and  $y$ , if needed).

15. QTSR is a trapezoid.

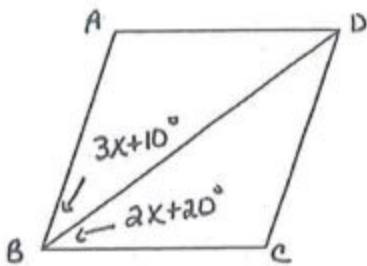
$JM = 38$



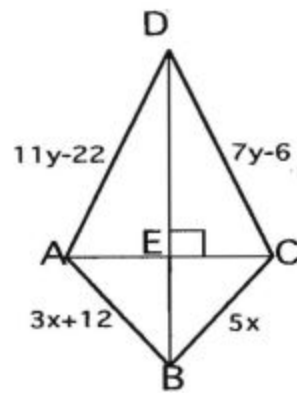
16. KMNJ is a rectangle.  $KN = 3x + 14$  and



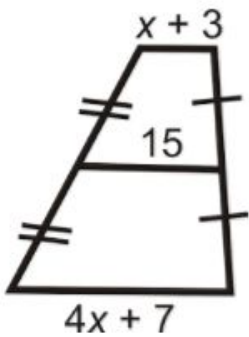
17. ABCD is a rhombus.



18. ABCD is a kite.

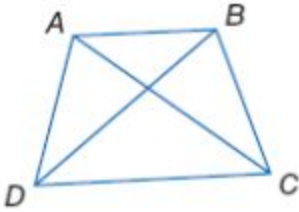


19. Figure is a trapezoid.



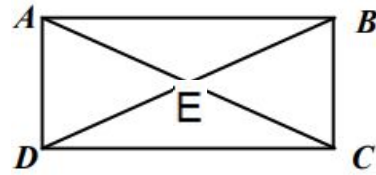
## Proofs with Quadrilaterals

20. Given: ABCD is an isosceles trapezoid  
Prove:  $\triangle ADC \cong \triangle BCD$



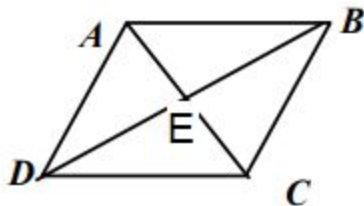
Statement:	Reason:
1.	1. Given
2. $\angle ADC \cong \angle BCD$	2.
3. $\overline{DC} \cong \overline{DC}$	3.
4.	4. Legs of an isosceles trapezoid are congruent
5. $\triangle ADC \cong \triangle BCD$	5.

21. Given: ABCD is a rectangle  
Prove:  $\triangle ADE \cong \triangle BCE$



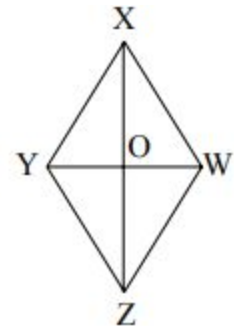
Statement:	Reason
1.	1. Given
2. $\overline{AD} \cong \overline{BC}$	2.
3. $\overline{AB} \parallel \overline{DC}$	3.
4.	4. Alternate interior angles
5. $\angle AED \cong \angle BEC$	5.
6. $\triangle ADE \cong \triangle BCE$	6.

22. Given: ABCD is a rhombus  
Prove:  $\triangle DEC \cong \triangle BEC$



Statement:	Reason:
1.	1. Given
2. $\overline{DC} \cong \overline{BC}$	2.
3. $\overline{ED} \cong \overline{BE}$	3.
4.	4. Diagonals of a rhombus are perpendicular
5. $\triangle DEC \cong \triangle BEC$	5.

23. Given:  $\overline{YX} \cong \overline{WX}$ ,  $\overline{ZX}$  bisects  $\angle YXW$   
Prove:  $\overline{YO} \cong \overline{WO}$



Statement:	Reason
1. $\overline{YX} \cong \overline{WX}$ , $\overline{ZX}$ bisects $\angle YXW$	1.
2.	2. Definition of bisect
3. $\overline{XO} \cong \overline{XO}$	3.
4. $\triangle YXO \cong \triangle WXO$	4.
5. $\overline{YO} \cong \overline{WO}$	5.

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