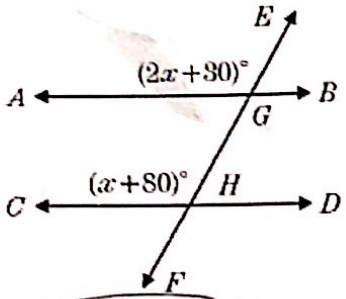
Unit 5 Review - Reasoning with Geometry NAME _____

Geometric Properties

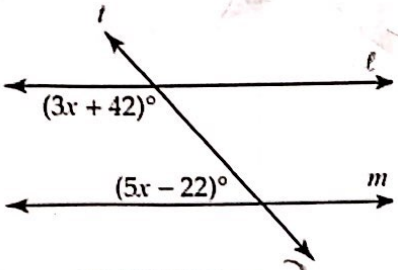
Solve for x.

1.



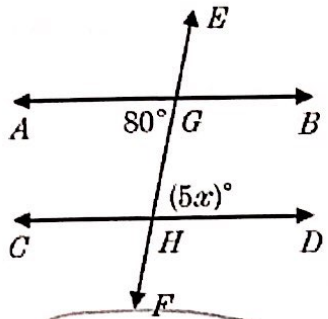
X=50

2.



X = 20

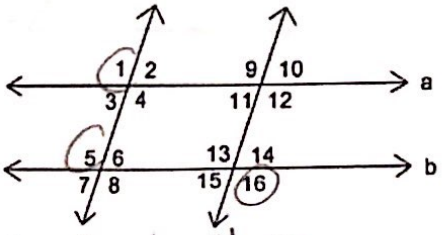
3.



X=16

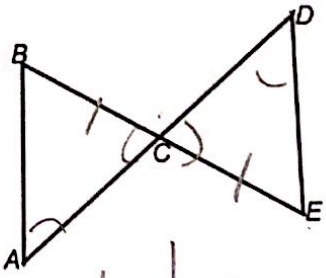
Proofs with Lines and Triangles

4. Given: a || b and c || d
Prove: ∠1 ≅ ∠16



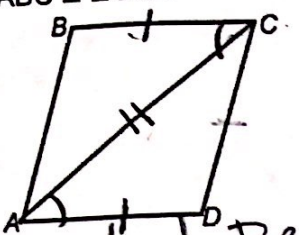
Statement	Reason
• a ∥ b	Given
• c ∥ d	given
• ∠1 ≅ ∠5	corresponding ∠s
• ∠5 ≅ ∠16	Alt Int ∠s
• ∠1 ≅ ∠16	Transitive Prop

5. Given: C is the midpoint of $\overline{BE}$, ∠A ≅ ∠D
Prove: △ABC ≅ △DEC



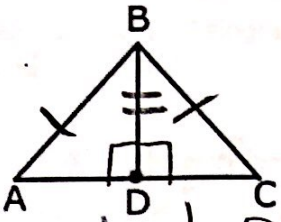
Statements	Reasons
• C is the midpt of $\overline{BE}$	Given
• $\overline{BC} \cong \overline{CE}$	def of midpt
∠D ≅ ∠A	Given
∠BCA ≅ ∠DCE	Vertical ∠s
△ABC ≅ △DEC	AAS

6. Given: $\overline{BC} \cong \overline{DA}$, $\overline{BC} \parallel \overline{DA}$
Prove: $\triangle ABC \cong \triangle CDA$



Statement	Reason
$\overline{BC} \parallel \overline{DA}$	Given
$\overline{BC} \parallel \overline{DA}$	Given
$\angle BCA \cong \angle CAD$	Alt Int $\angle$s
$\overline{AC} \cong \overline{AC}$	Reflective
$\triangle ABC \cong \triangle CDA$	SAS

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

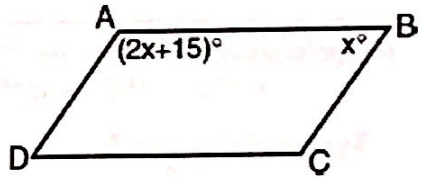


Statement	Reason
$\overline{BD} \perp \overline{AC}$	Given
$\overline{BA} \cong \overline{BC}$	Given
$\overline{BD} \cong \overline{BD}$	Reflexive
$\triangle BAD \cong \triangle BCD$	HL

Properties of Parallelograms

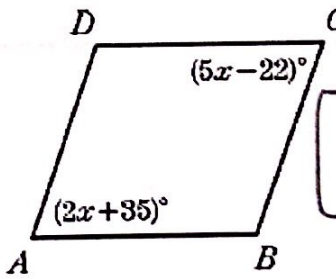
Solve for x.

8.



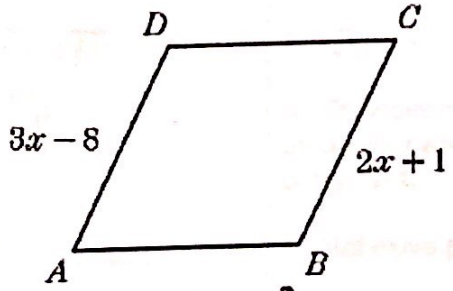
$x = 55$

9.



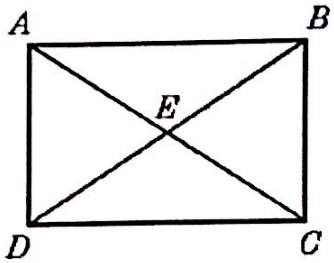
$x = 19$

10.



$x = 9$

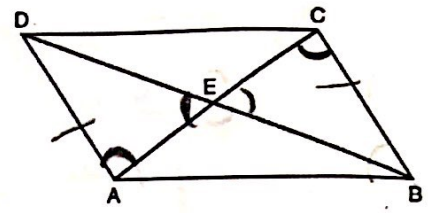
11. $BD = 8x + 4$ and $BE = 22$



$x = 5$

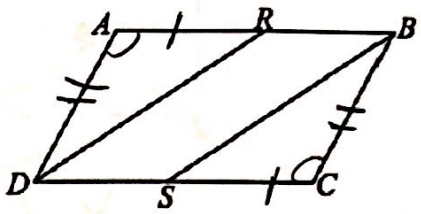
Proofs with Parallelograms

12. Given: ABCD is a parallelogram
Prove: △DEA ≅ △BEC



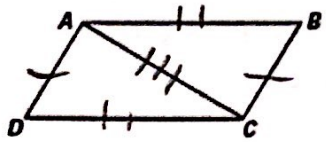
Statement:	Reason:
1. Parallelogram ABCD	1. Given
2. $\overline{DA} \cong \overline{CB}$	2. Opp sides ≅
3. ∠DAC ≅ ∠BCA	3. Alt Int <s
4. <DEA ≅ <BEC	4. Vertical angles
5. △DEA ≅ △BEC	5. AAS

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



Statement:	Reason:
1. Parallelogram ABCD, AR ≅ CS	1. Given
2. $\overline{AD} \cong \overline{CB}$	2. Opp sides ≅
3. ∠DAB ≅ ∠BCD	3. Opp <s ≅
4. △ARD ≅ △CSB	4. SAS

14. Given: ABCD is a parallelogram
Prove: ∠DAC ≅ ∠BCA

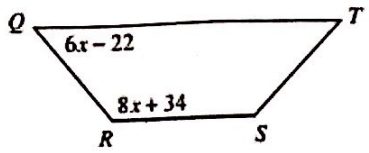


Statement:	Reason:
1. ABCD is a parallelogram	1. Given
2. $\overline{AD} \cong \overline{BC}$	2. Opp sides ≅
3. $\overline{AB} \cong \overline{DC}$	3. Opposite sides of parallelogram are congruent.
4. $\overline{AC} \cong \overline{AC}$	4. Reflexive property
5. △DAC ≅ △BCA	5. SSS
6. ∠DAC ≅ ∠BCA	6. CPCTC

Properties of Quadrilaterals

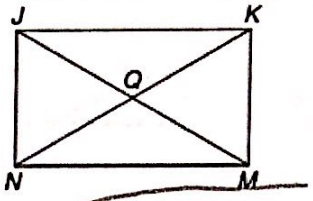
Solve for x (and y, if needed).

15. QTSR is a trapezoid.



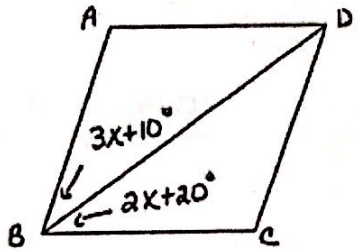
X=12

16. KMNJ is a rectangle. $KN = 3x + 14$ and $JM = 38$



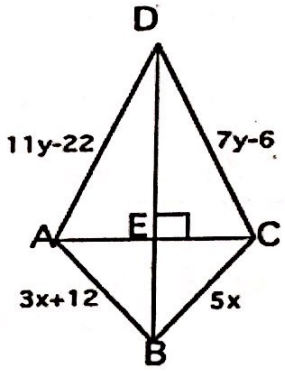
X=8

17. ABCD is a rhombus.



X=16

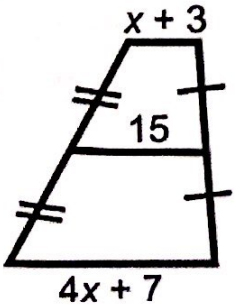
18. ABCD is a kite.



X=6

y=4

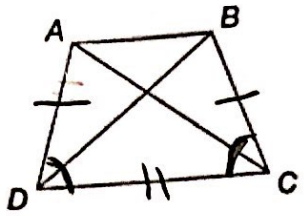
19. Figure is a trapezoid.



X=4

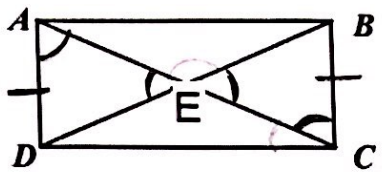
Proofs with Quadrilaterals

20. Given: ABCD is an isosceles trapezoid
Prove: △ADC ≅ △BCD



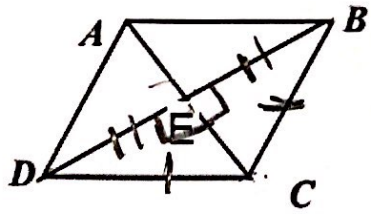
Statement:	Reason:
1. ABCD is isosceles trapezoid	1. Given
2. ∠ADC ≅ ∠BCD	2. base ∠s ≅
3. $\overline{DC} \cong \overline{DC}$	3. Reflexive prop
4. $\overline{AD} \cong \overline{BC}$	4. Legs of an isosceles trapezoid are congruent
5. △ADC ≅ △BCD	5. SAS

21. Given: ABCD is a rectangle
Prove: △ADE ≅ △BCE



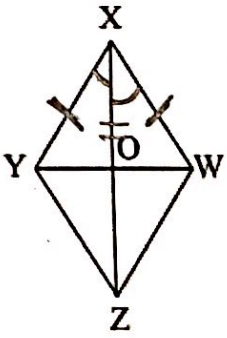
Statement:	Reason
1. Rectangle ABCD	1. Given
2. $\overline{AD} \cong \overline{BC}$	2. opp sides ≅ prop
3. $\overline{AB} \parallel \overline{DC}$	3. opp sides ∥ prop
4. ∠DAE ≅ ∠BCE	4. Alternate interior angles
5. ∠AED ≅ ∠BEC	5. Vertical ∠s
6. △ADE ≅ △BCE	6. AAS

22. Given: ABCD is a rhombus
Prove: △DEC ≅ △BEC



Statement:	Reason:
1. ABCD is a rhombus	1. Given
2. $\overline{DC} \cong \overline{BC}$	2. all sides ≅ prop
3. $\overline{ED} \cong \overline{BE}$	3. diagonals bisect.
4. ∠DEC ≅ ∠BEC	4. Diagonals of a rhombus are perpendicular
5. △DEC ≅ △BEC	5. SAS

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



Statement:	Reason
1. $\overline{YX} \cong \overline{WX}$, $\overline{ZX}$ bisects ∠YXW	1. Given
2. ∠YXZ ≅ ∠WXZ	2. Definition of bisect
3. $\overline{XO} \cong \overline{XO}$	3. Reflexive Prop
4. △YXO ≅ △WXO	4. SAS
5. $\overline{YO} \cong \overline{WO}$	5. CPCTC