Quadrilaterals and Parallels

EXAMPLE A parallelogram is a quadrilateral whose opposite sides are parallel.

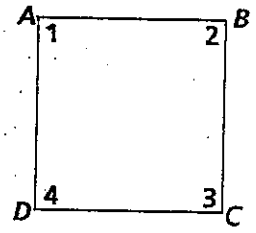
A rectangle is a parallelogram with four right angles.

A rhombus is a parallelogram with four equal sides.

A square is a rectangle with sides of equal length.

Directions Use the figure at the right and the definitions and theorems about parallels to complete the following statements.

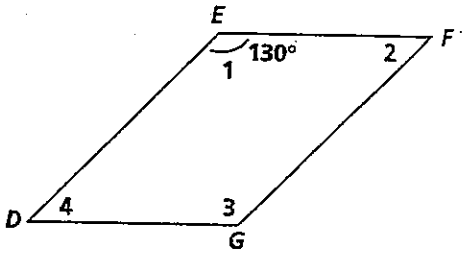
1. $\overline{AB}$ is parallel to _____.
2. $\overline{AD}$ is parallel to _____.
3. $\overline{AB}$ is not parallel to _____ and _____.
4. $\overline{AD}$ is not parallel to _____ and _____.
5. $m\angle 1 + m\angle 2 =$ _____
6. $m\angle 1 + m\angle 4 =$ _____
7. $m\angle 2 + m\angle 3 =$ _____
8. $m\angle 1 + m\angle 2 + m\angle 3 + m\angle 4 =$ _____



Given: *ABCD* **is a square.**

Directions Use the figure at the right and the definitions and theorems about parallels to complete the following statements.

9. $\overline{DE}$ is parallel to _____.
10. $\overline{EF}$ is parallel to _____.
11. $m\angle 2 =$ _____
12. $m\angle 1 + m\angle 2 =$ _____
13. $m\angle 1 + m\angle 4 =$ _____
14. $m\angle 1 + m\angle 2 = m\angle 1 + m\angle 4$. $m\angle 2 =$ _____.
15. $m\angle 1 + m\angle 2 + m\angle 3 + m\angle 4 =$ _____



Given: *DEFG* **is a parallelogram.**

Name _____ Date _____ Period _____

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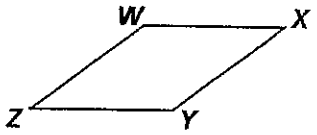
Directions Use definitions and theorems about parallels to complete the following statements.

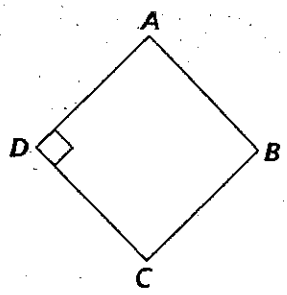
Use the figure at the right for problems 1–5.



Given: *WXYZ* is a parallelogram.

1. $\overline{WX}$ is parallel to which line segment? _____
2. $\overline{WZ}$ is parallel to which line segment? _____
3. $\overline{WX}$ is not parallel to which line segments? _____
4. $m\angle Y + m\angle Z =$ _____
5. $m\angle W + m\angle X + m\angle Y + m\angle Z =$ _____

Use the figure at the right for problems 6–11.



Given: *ABCD* is a square.

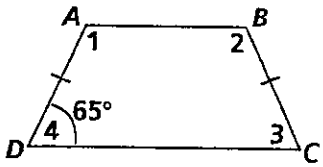
6. $m\angle A =$ _____
7. $m\angle D =$ _____
8. $m\angle B + m\angle C =$ _____
9. $m\angle A + m\angle B + m\angle C + m\angle D =$ _____
10. $m\angle A + m\angle B =$ _____
11. $\overline{AB}$ is not parallel to which line segments? _____

Trapezoids

EXAMPLE A trapezoid is a quadrilateral with exactly one pair of parallel sides.
An isosceles trapezoid is a trapezoid with two equal sides.
A right trapezoid is a trapezoid with two right angles.

Directions Use the figure at the right to find the answers.

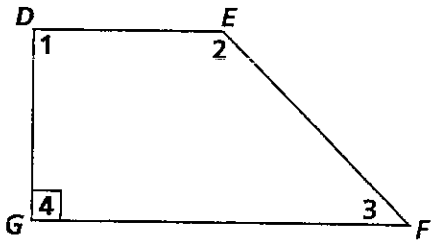
1. Which sides are parallel? _____
2. $m\angle 1 =$ _____
3. $m\angle 1 + m\angle 4 =$ _____
4. $m\angle 2 + m\angle 3 =$ _____
5. Angle sum = _____



Given: *ABCD* **is an isosceles trapezoid.**

Directions Use the figure at the right to find the answers.

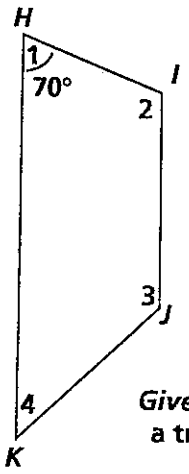
6. Which sides are parallel? _____
7. $m\angle 1 =$ _____
8. $m\angle 1 + m\angle 4 =$ _____
9. $m\angle 2 + m\angle 3 =$ _____
10. Angle sum = _____



Given: *DEFG* **is a right trapezoid.**

Directions Use the figure at the right to find the answers.

11. Which sides are parallel? _____
12. $m\angle 2 =$ _____
13. $m\angle 1 + m\angle 2 =$ _____
14. $m\angle 3 + m\angle 4 =$ _____
15. Angle sum = _____

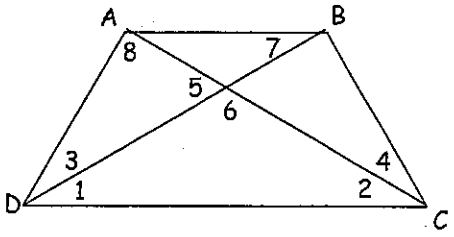


Given: *HIJK* **is a trapezoid.**

Geometry Worksheet
Trapezoids (6.5)

Name_____
Date_____ Period_____

1. Given: Isosceles trapezoid ABCD, m∠BAC = 30° and m∠DBC = 85°



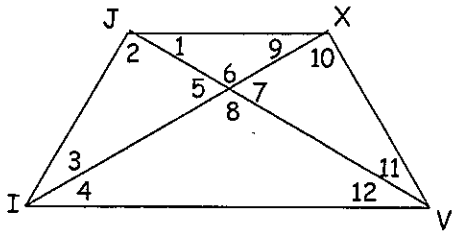
m∠1=_____ m∠5=_____ m∠ ADC =_____

m∠2=_____ m∠6=_____ m∠ BCD =_____

m∠3=_____ m∠7=_____ m∠ DAB =_____

m∠4 =_____ m∠8 =_____ m∠CBA=_____

2. Given: Isosceles trapezoid JXVI, m∠JVI = 42° and m∠IJV = 65°



m∠1=_____ m∠6=_____ m∠11=_____

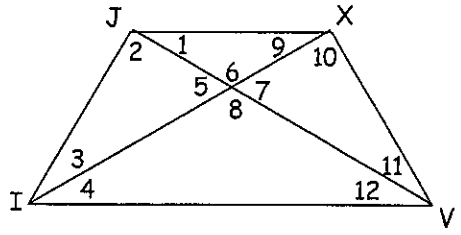
m∠2=_____ m∠7=_____ m∠12=_____

m∠3=_____ m∠8=_____ m∠ JIV =_____

m∠4=_____ m∠9=_____ m∠IJX=_____

m∠5 =_____ m∠10=_____

3. Given: Isosceles trapezoid JXVI, m∠IXV = 83° and m∠VJX = 28°



m∠1=_____ m∠6=_____ m∠11=_____

m∠2=_____ m∠7=_____ m∠12=_____

m∠3=_____ m∠8=_____ m∠ IVX =_____

m∠4=_____ m∠9=_____ m∠VXJ=_____

m∠5 =_____ m∠10=_____