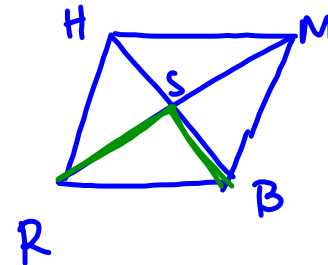


NO QUIZ TODAY!!

We will go over any questions from lesson

7.2 and move on to lesson 7.3, so get

ready!!



7.2
pg 116

⑦ $\overline{RB} = 25$
 $HR = 25$

⑨ $m\angle RSB = 90^\circ$

7.3

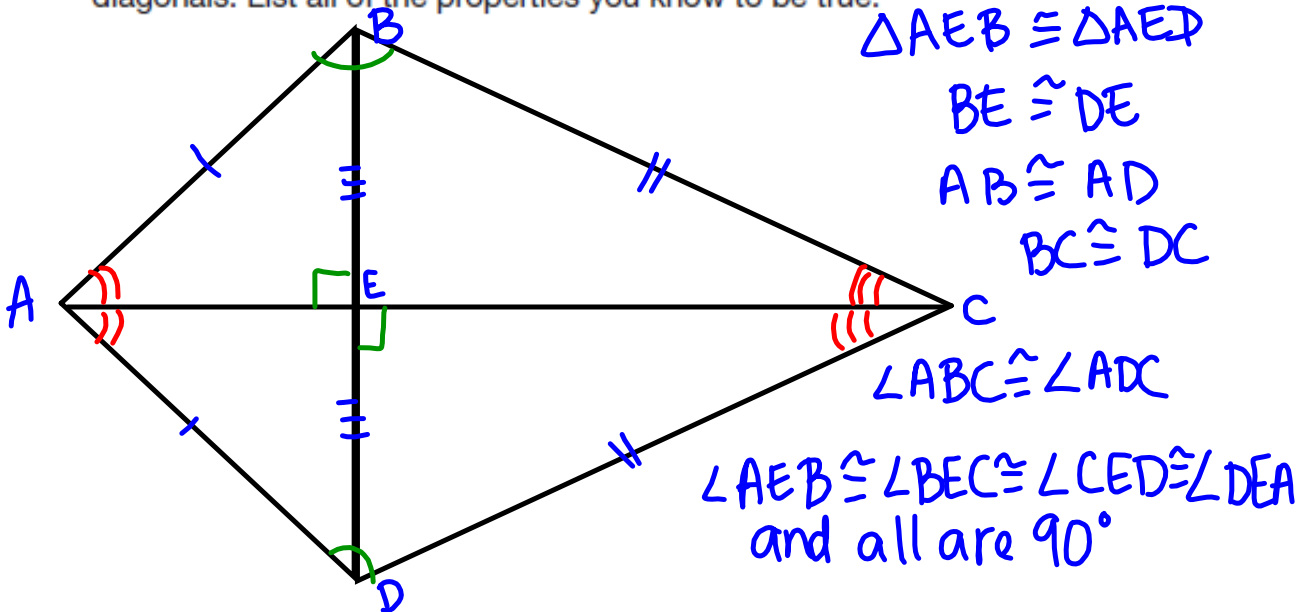
Kites and Trapezoids

Properties of Kites and Trapezoids

PG.509-510 IN YOUR BOOK

A kite is a quadrilateral with two pairs of consecutive congruent sides with opposite sides that are not congruent.

1. Draw a kite with two diagonals. Label the vertices and the intersection of the two diagonals. List all of the properties you know to be true.

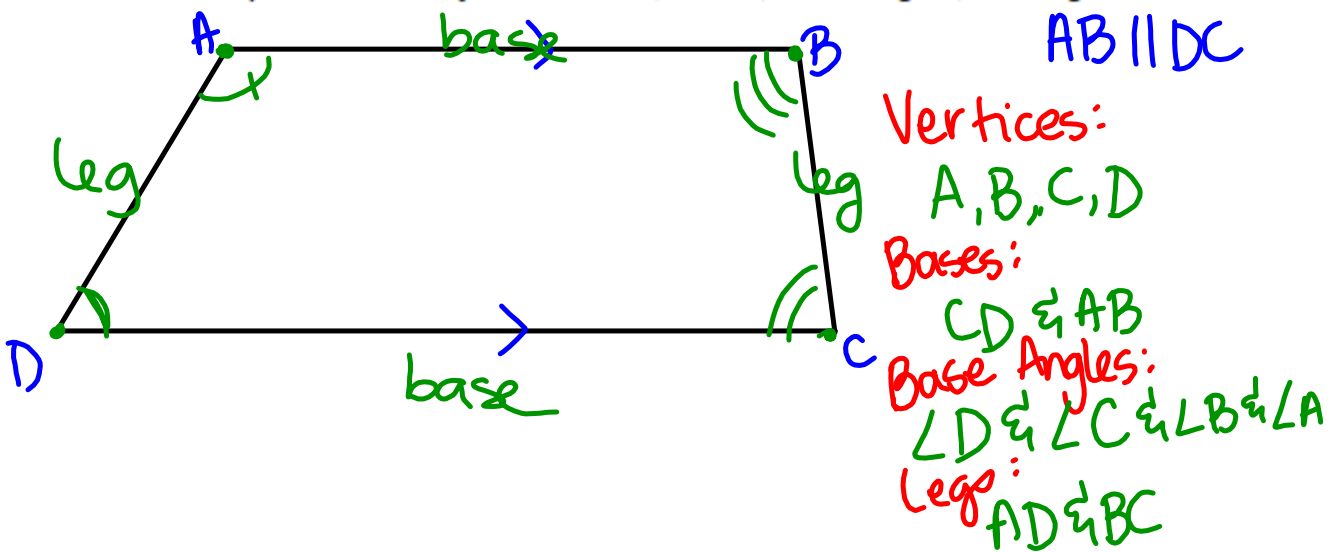


PG.513 IN YOUR BOOK

A trapezoid is a quadrilateral with exactly one pair of parallel sides.

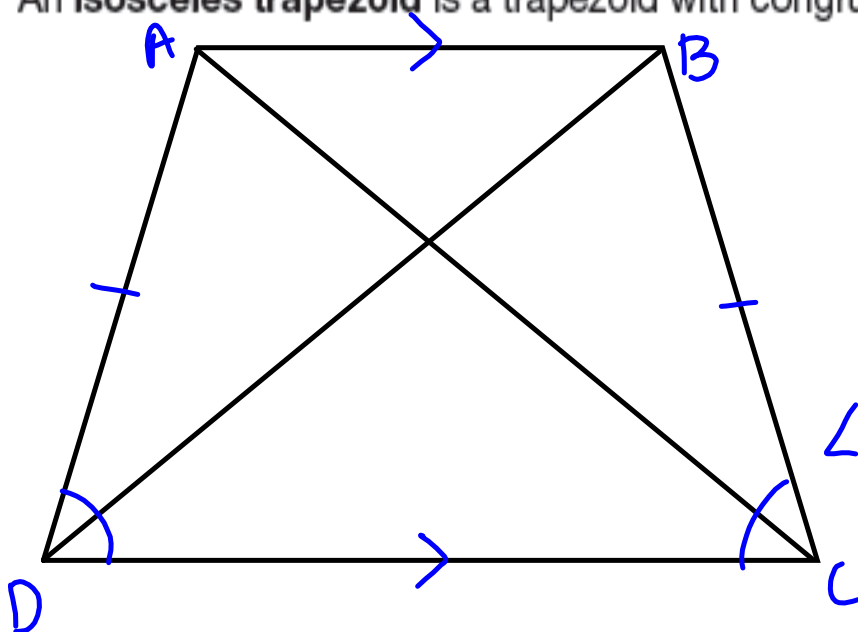
The bases of a trapezoid are its parallel sides. The base angles of a trapezoid are either pair of angles that share a base as a common side. The legs of a trapezoid are its non-parallel sides.

1. Draw a trapezoid. Identify the vertices, bases, base angles, and legs.



PG.514 IN YOUR BOOK

An **isosceles trapezoid** is a trapezoid with congruent non-parallel sides.



$$AB \parallel DC$$

$$AD \cong BC$$

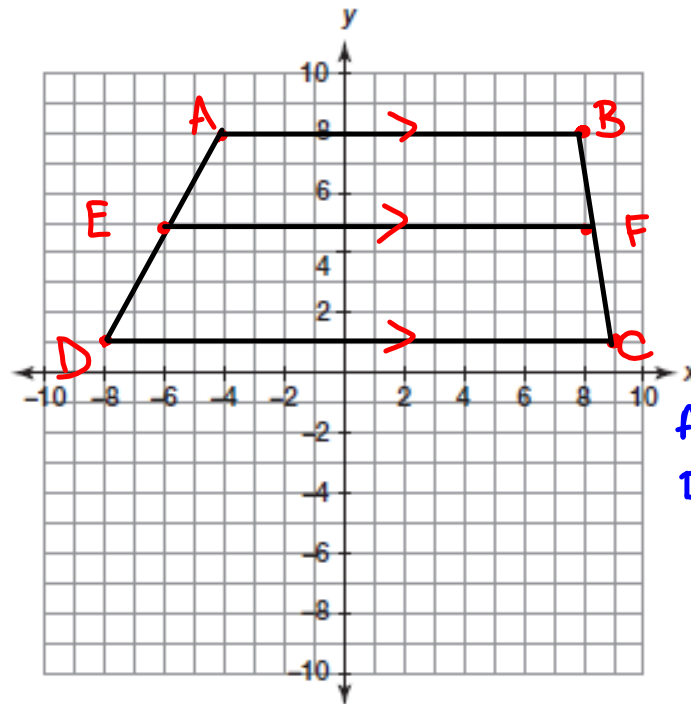
$$DB \cong AC$$

(diagonals are \cong)

$$\angle ADC \cong \angle BCD$$

PG.519 IN YOUR BOOK

1. Locate four points on the coordinate plane to form a trapezoid.



midpoint formula:

$$\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$$

$$AB = 12$$

$$DC = 17$$

2. Identify the coordinates of the four points you chose.

$$A(-4, 8); B(8, 8); C(9, 1); D(-8, 1)$$

3. Determine the coordinates of the midpoints of the legs of your trapezoid. Use the midpoint formula.

$$\text{mdpt AD: } \left(\frac{-4 + -8}{2}, \frac{8 + 1}{2} \right)$$

$$\text{mdpt BC: } \left(\frac{8 + 9}{2}, \frac{8 + 1}{2} \right)$$

$$E_{\text{mdpt}}: (-6, 4.5)$$

$$F_{\text{mdpt}}: (8.5, 4.5)$$

4. Plot and connect the midpoints of the legs. Determine the distance between the two midpoints.

$$8.5 - -6$$

$$EF = 14.5$$

PG.520 IN YOUR BOOK

The midsegment of a trapezoid is a segment formed by connecting the midpoints of the legs of the trapezoid.

5. Determine the lengths of the two bases of your trapezoid.

$$AB = 12$$

$$DC = 17$$

6. Determine the length of the midsegment of your trapezoid.

$$EF = 14.5$$

7. Compare the length of the midsegment to the sum of the lengths of the bases.

$$AB + DC$$

$$12 + 17$$

$$29$$

$$EF$$

$$14.5$$

midsegment is $\frac{1}{2}$
the sum of the bases.

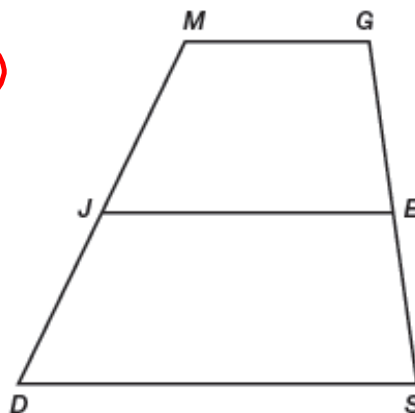
8. Is the midsegment of the trapezoid parallel to the bases of the trapezoid? Explain your reasoning.

Yes, all 3 slopes are 0.

PG.521 IN YOUR BOOK

The Trapezoid Midsegment Theorem states: "The midsegment of a trapezoid is parallel to each of the bases and its length is one half the sum of the lengths of the bases."

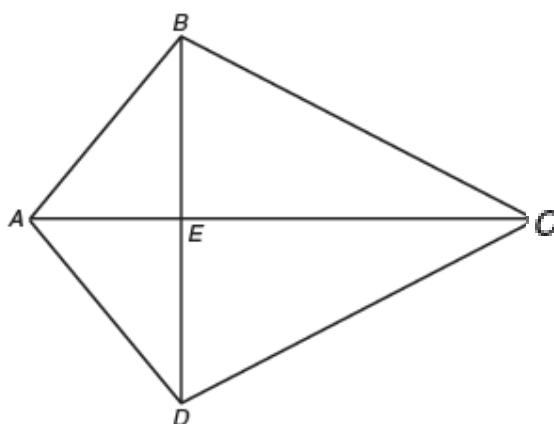
$$JE = \frac{1}{2}(MG + DS)$$



Classwork/Homework

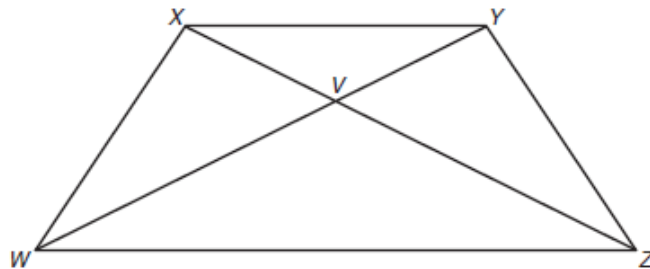
Finish Lesson 7.3

Quadrilateral $ABCD$ is a kite.



1. If $m\angle ABC = 95^\circ$, what is $m\angle ADC$? Explain.
2. If $m\angle BCE = 34^\circ$, what is $m\angle EBC$? Explain.
3. If the length of \overline{AB} is 16 feet, what is AD ? Explain.
4. If the length of \overline{BD} is 25 feet, what is ED ? Explain.

Quadrilateral $WXYZ$ is an isosceles trapezoid.



5. If $m\angle XWZ = 66^\circ$, what is $m\angle YZW$? Explain.

6. If the length of \overline{WY} is 10 inches, what is ZX ? Explain.

7. If the length of \overline{WX} is 7 inches, what is ZY ? Explain.