Chapter 8 Jeopardy

By Stephanie Zhou and Sonal Shrivastava

8.1	8.2	8.3	8.4	8.5	8.6
100	100	100	100	100	100
200	200	200	200	200	200
300	300	300	300	300	300
400	400	400	400	400	400
500	500	500	500	500	500

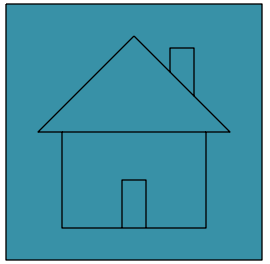
8.1 100 Points

What are the sum of the interior angles of the following convex polygon?

A 16-gon

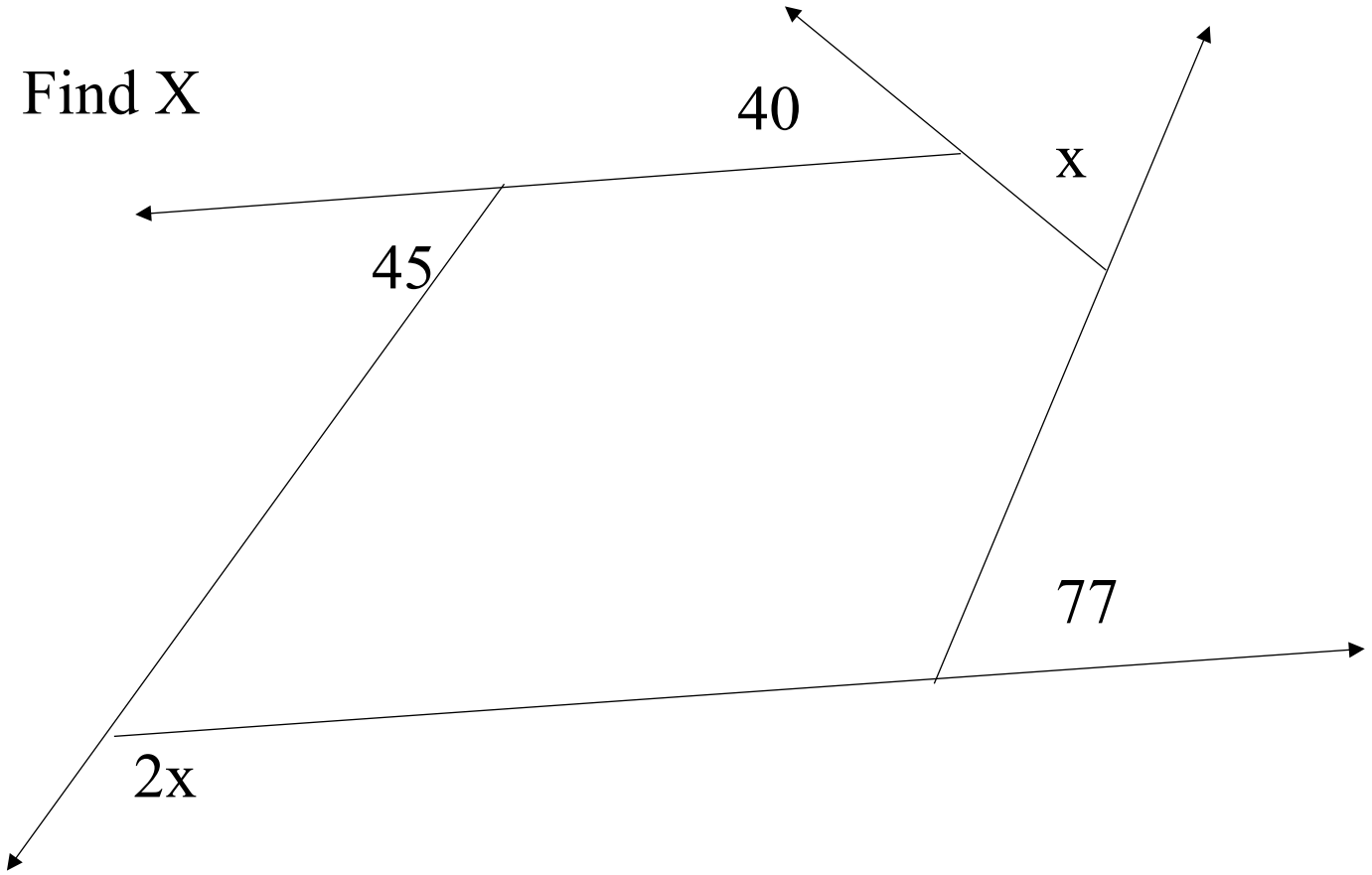
ANSWER

2520 degrees



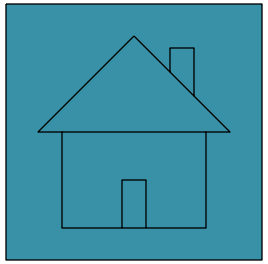
8.1 200 Points

Find X



ANSWER

X= 66



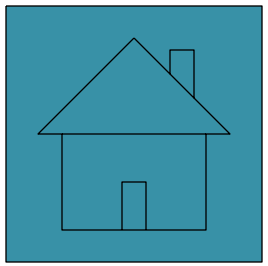
8.1 300 Points

Find the value of n for the regular n-gon described…

Each exterior angle of the regular n-gon has a measure of 9 degrees

ANSWER

$$n = 40$$

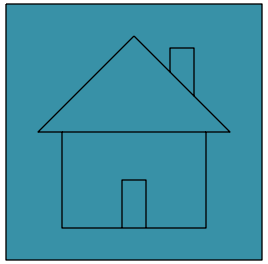


8.1 400 Points

The base of a jewelry box is shaped like a regular hexagon. Find the measure of each interior angle of the jewelry box…

ANSWER

135 degrees



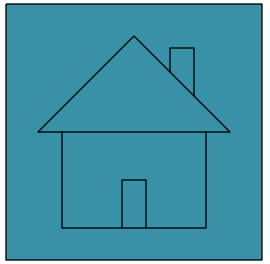
8.1 500 Points

Side are added to a convex polygon so that the sum of its interior angle measures is increased by 540 degrees. How many side are added to the polygon?

ANSWER

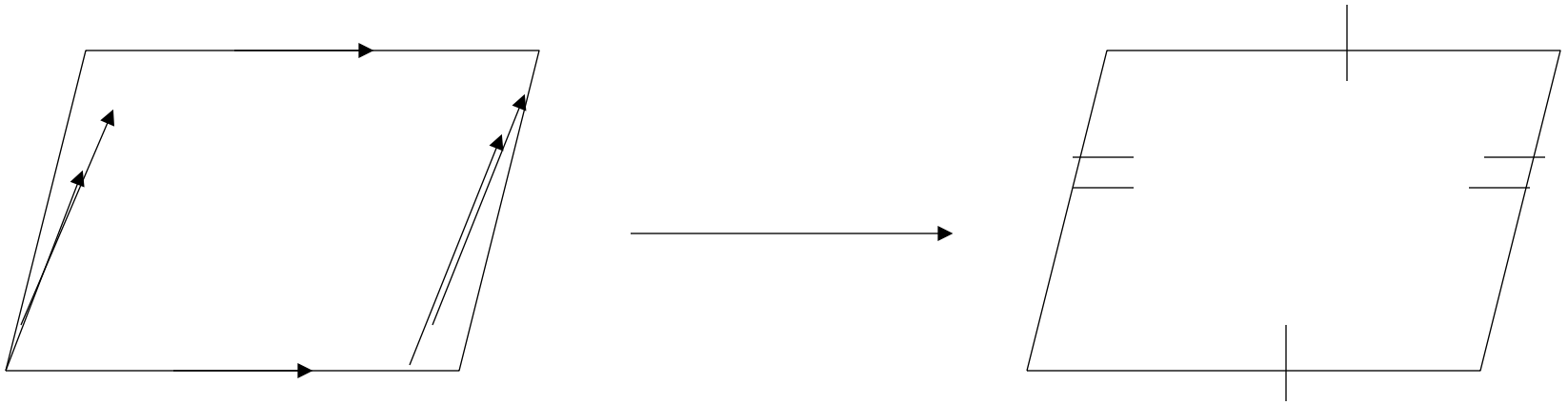
3 sides

*Solve the equation (n + x – 2) * 180 = 540 + (n-2) * 180 for x where n is the number of original sides and x is the number of sides added*



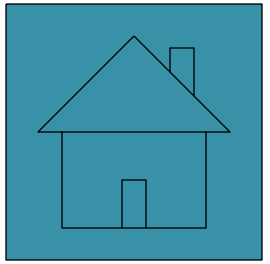
8.2 100 Points

What theorem does this illustrate?



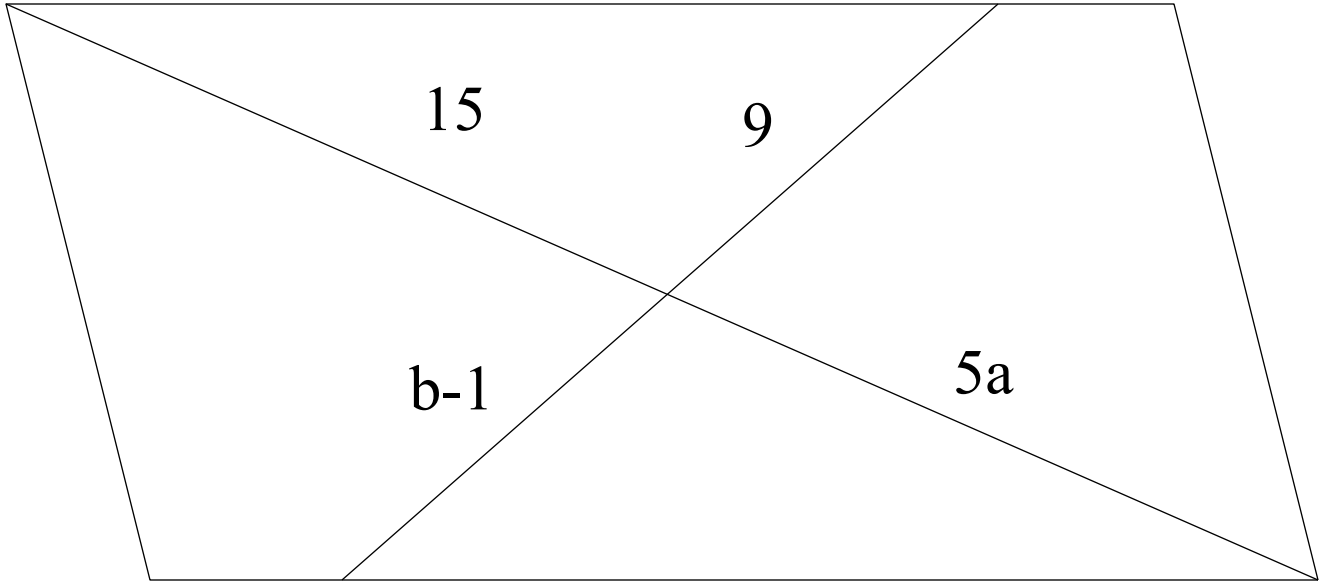
ANSWER

If a quadrilateral is a parallelogram then its opposite sides are congruent



8.2 200 Points

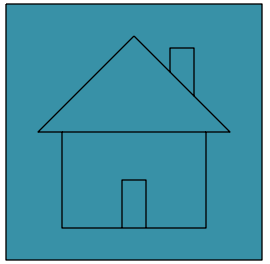
Find the value of each variable in the parallelogram.



ANSWER

a=3

b=10

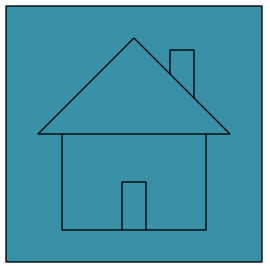


8.2 300 Points

In a parallelogram ABCD, AB=14 inches, BC=20 inches. What is the perimeter of ABCD?

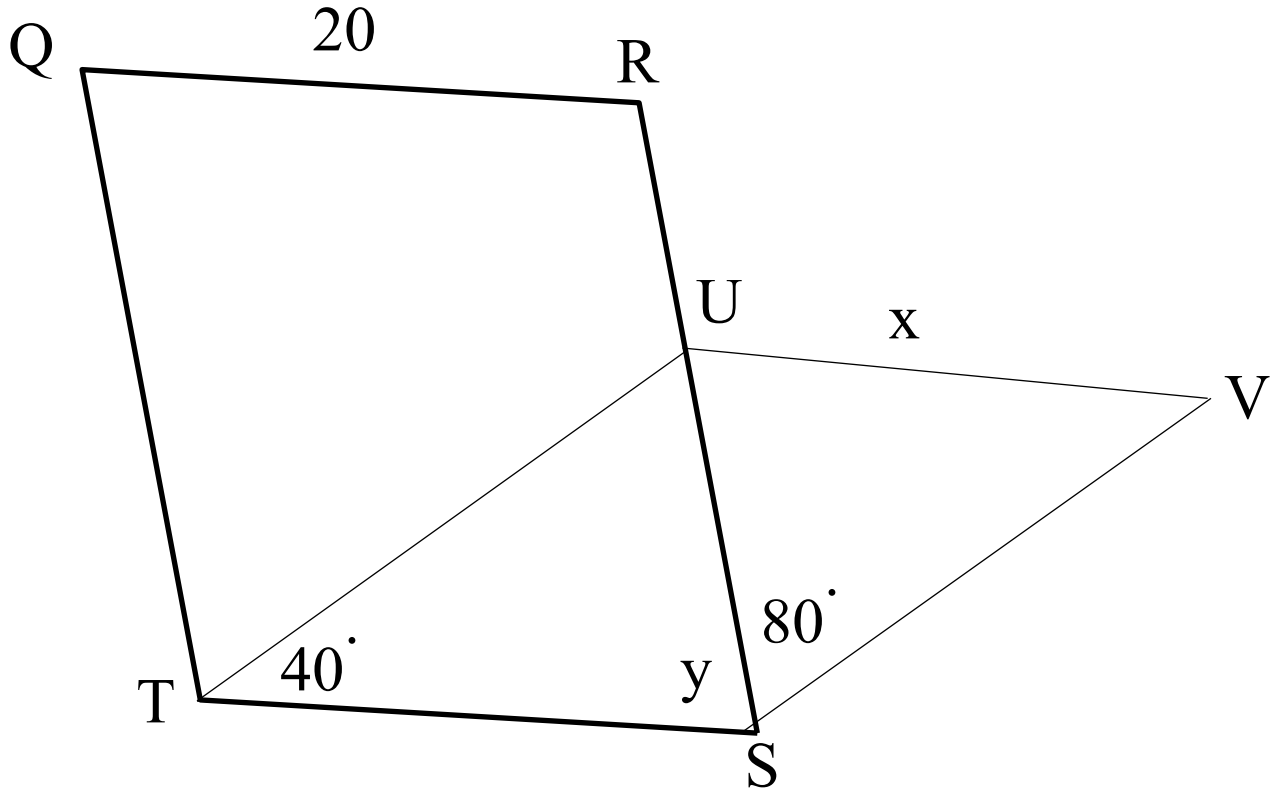
ANSWER

68 inches



8.2 400 Points

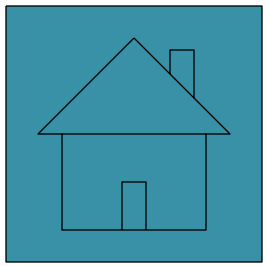
In the diagram, QRST and STUV are parallelograms
Find the values of x and y



Answer

$x = 20$

$y = 60^{\cdot}$

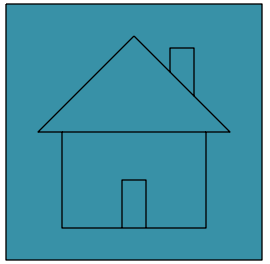


8.2 500 Points

The measure of one interior angle of a parallelogram is 50 degrees more than 4 times the measure of another angle. Find the measure of each angle

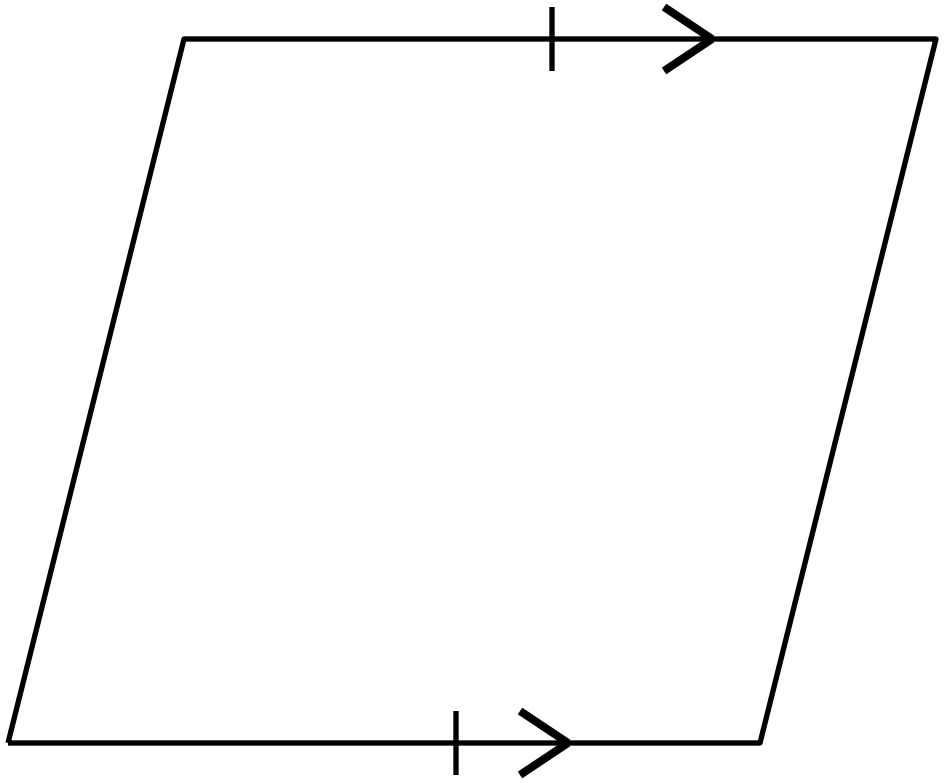
Answer

26 degrees
154 degrees



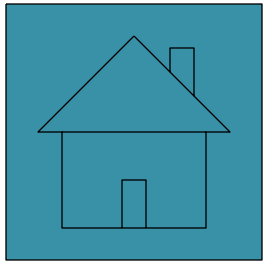
8.3 100 Points

What theorem is this picture illustrating?



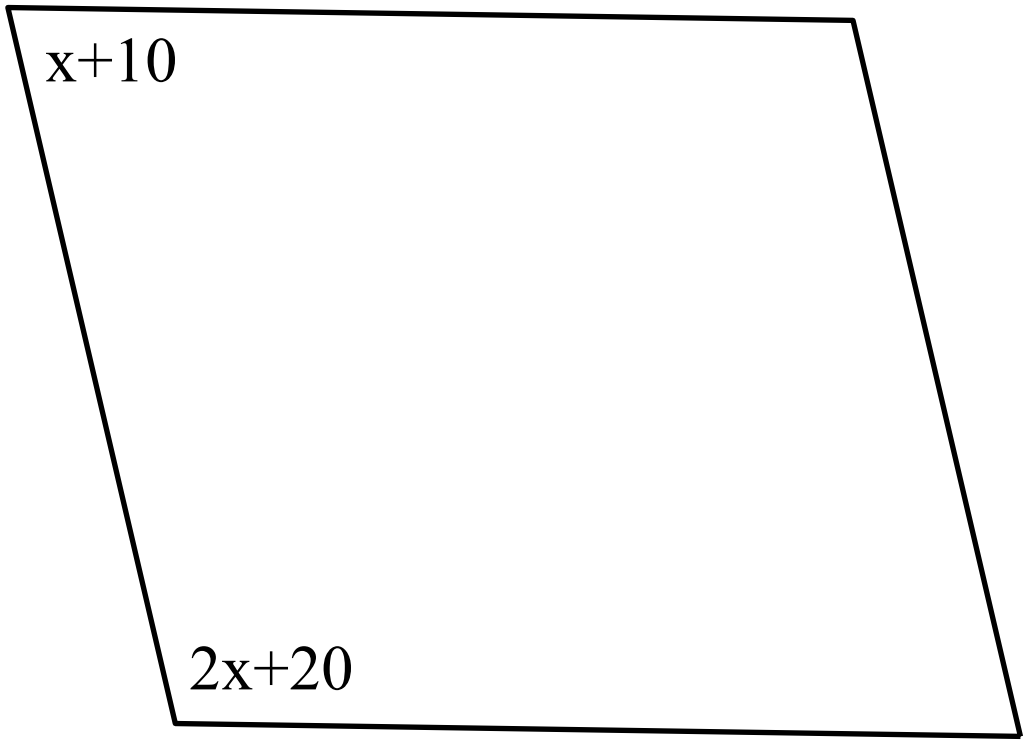
Answer

If one pair of opposite sides of a quadrilateral are congruent than the quadrilateral is a parallelogram



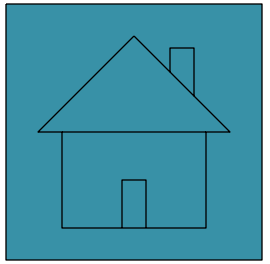
8.3 200 Points

For what value of x is the quadrilateral a parallelogram?



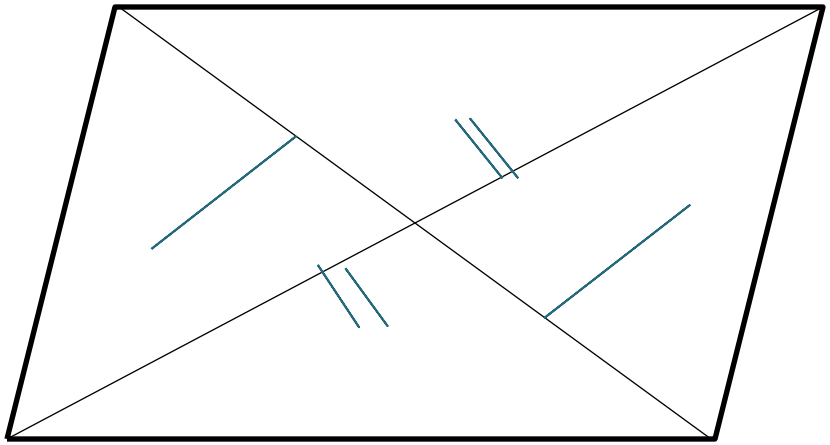
Answer

$x = 50$

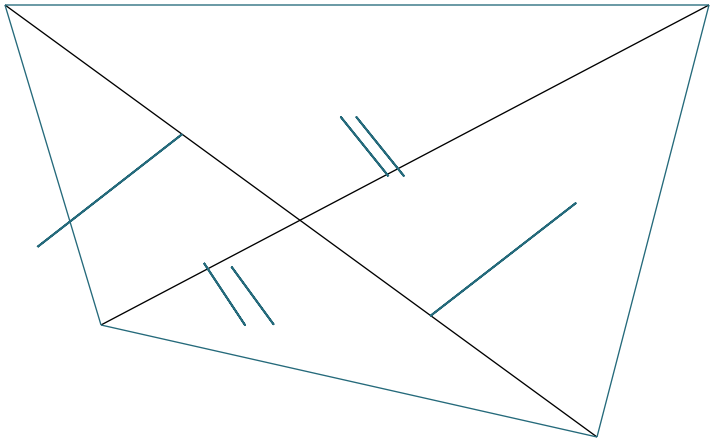


8.3 300 Points

Draw a quadrilateral with the marked properties that is clearly not a parallelogram

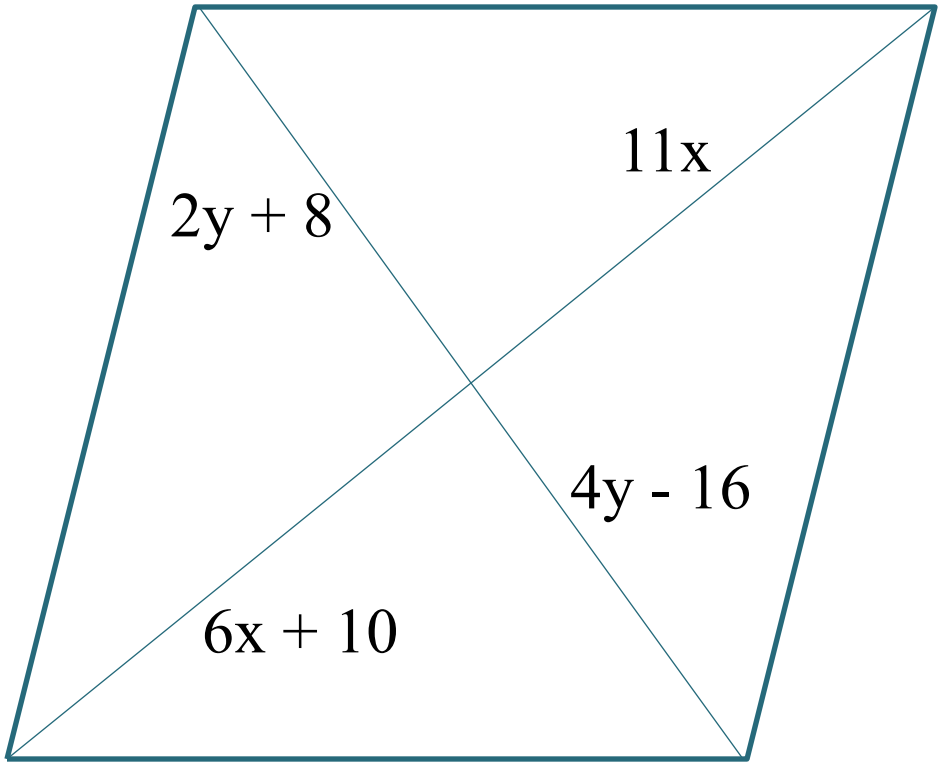


Answer



8.3 400 Points

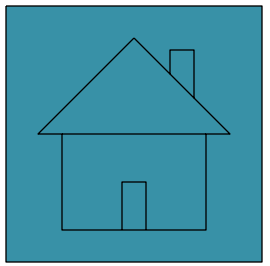
For what value of x and y is the quadrilateral a parallelogram



Answer

$x = 2$

$y = 12$



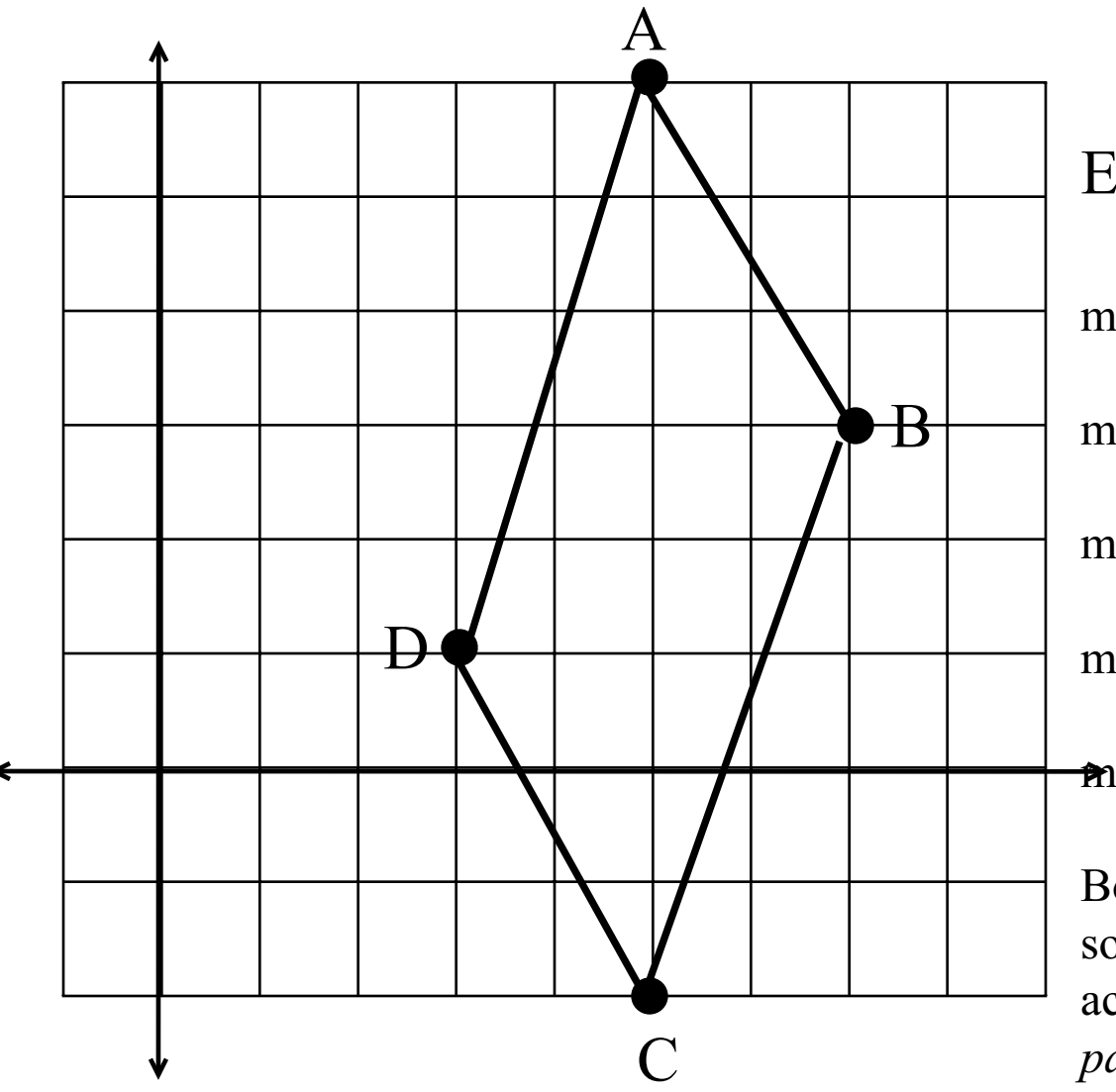
8.3 500 Points

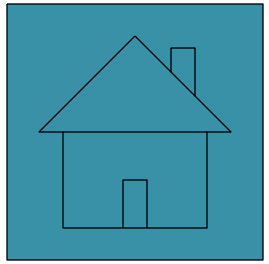
The coordinates of quadrilateral. Draw ABCD in a coordinate plane and show that it is a parallelogram

A(5,6)B(7,3)

C(5,-2) D(3,1)

Answer





EX Answer:

mAB= -3/2

mDC= -3/2

mDA= 5/2

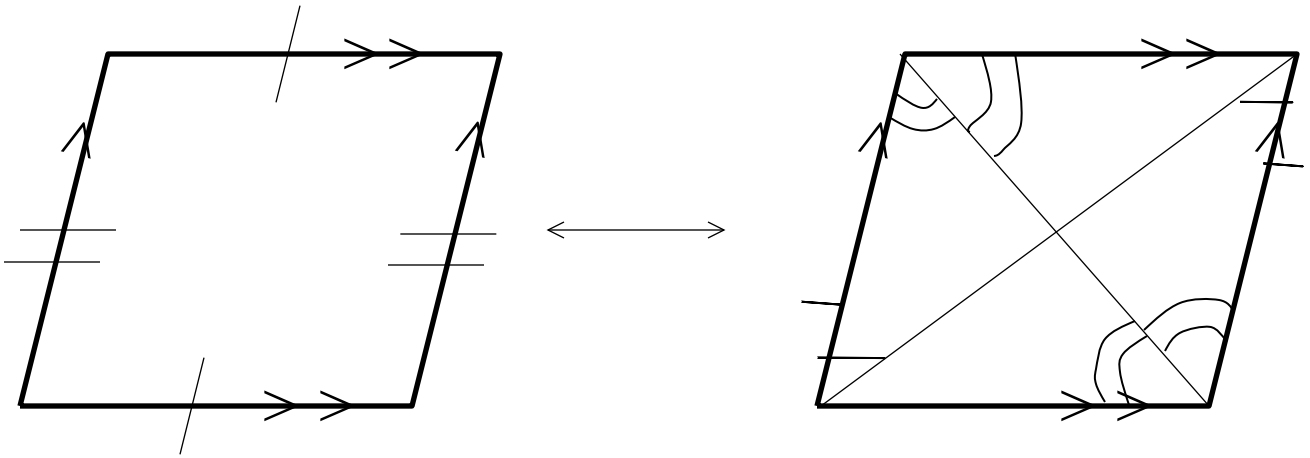
mCB= 5/2

$\overline{mAB} \cong \overline{mDC}$ and $\overline{mDA} \cong \overline{mCB}$

Both pairs of opposite sides are parallel so the quadrilateral is a parallelogram according to the *definition of a parallelogram*

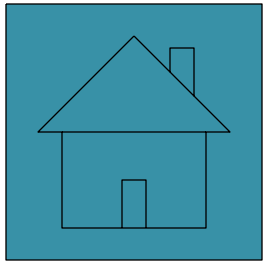
8.4 100 Points

What theorem is illustrated?



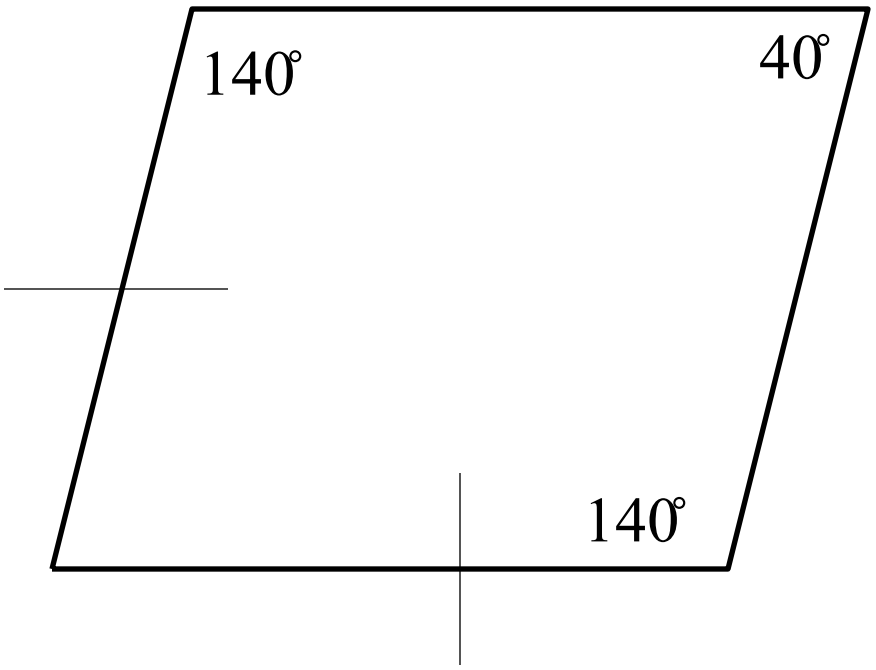
ANSWER

A parallelogram is a rhombus if and only if each diagonal bisects a pair of opposite angles.



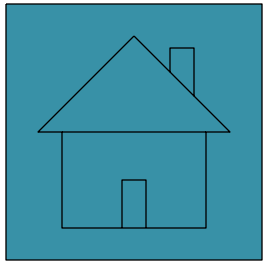
8.4 200 Points

Classify the quadrilateral.



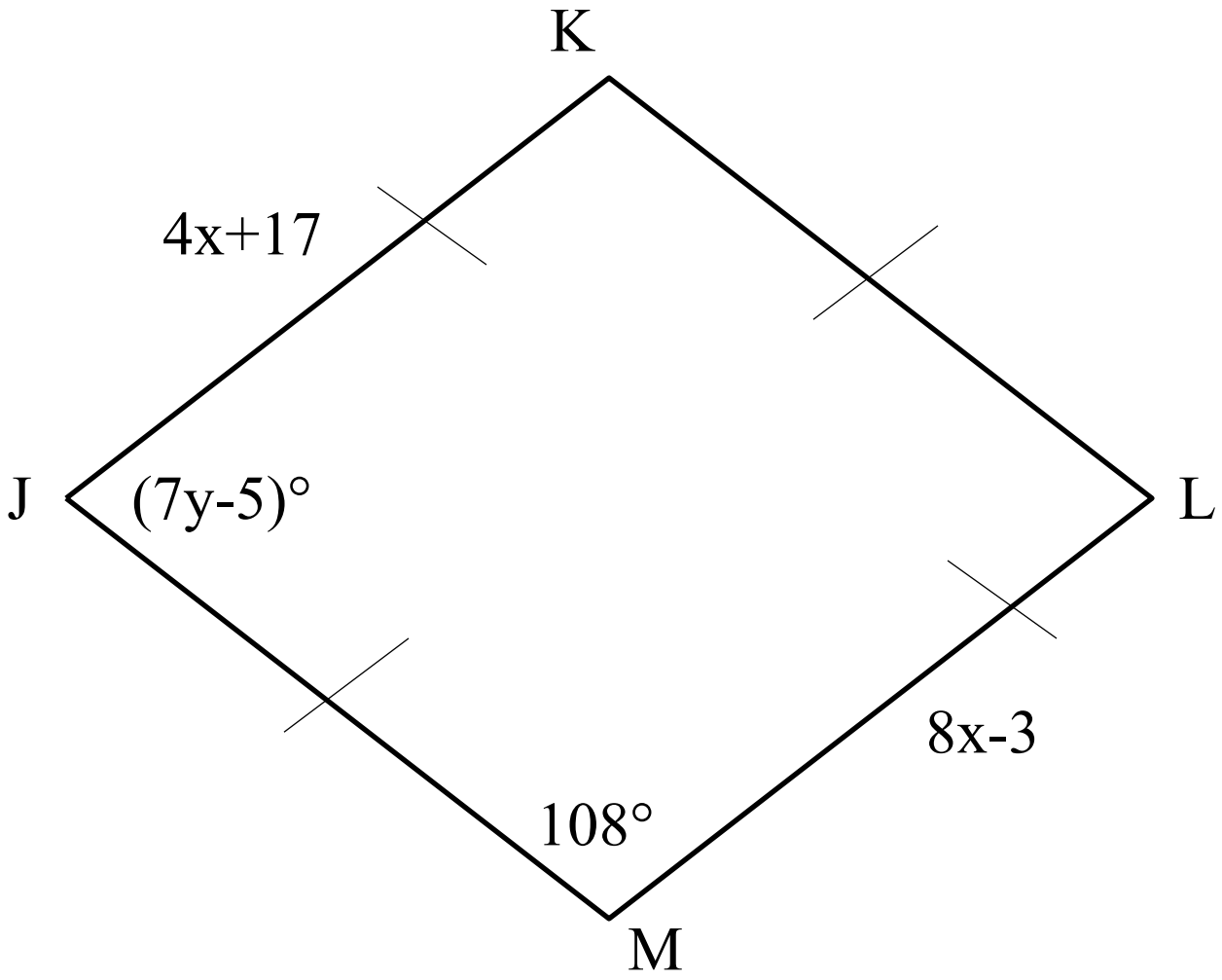
ANSWER

Rhombus



8.4 300 Points

Classify the special quadrilateral. Then find x and y.

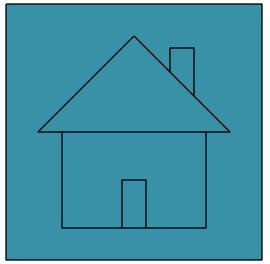


ANSWER

Rhombus

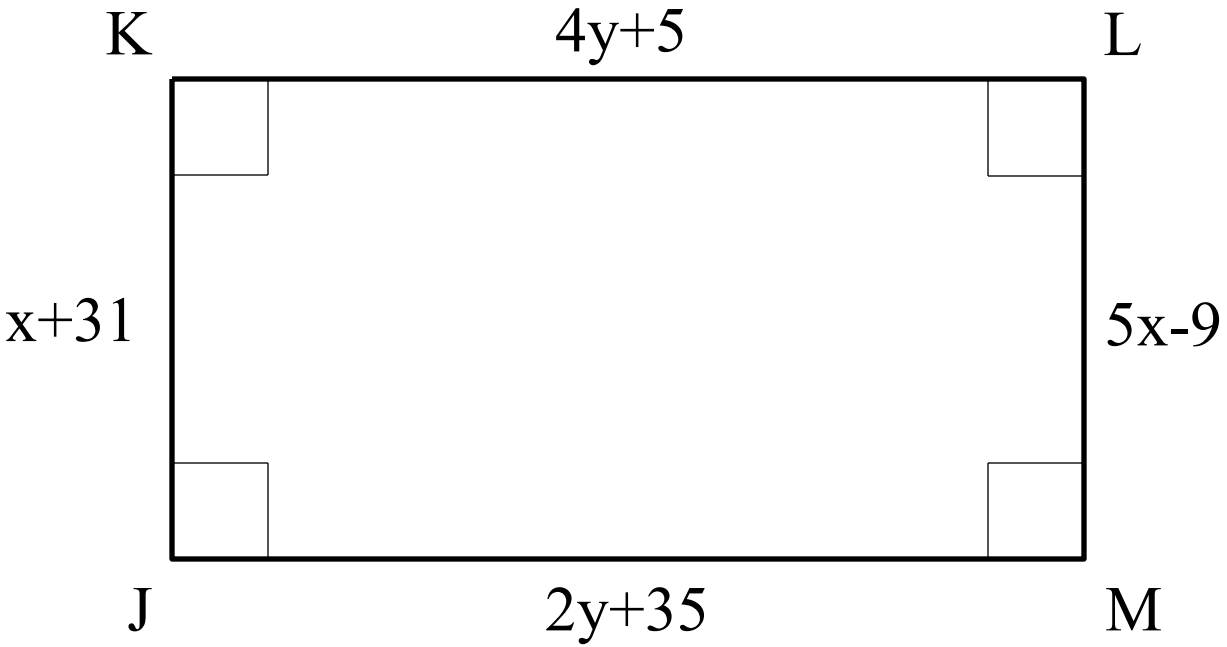
x=5

y=11



8.4 400 Points

Classify the special quadrilateral. Then find x and y.

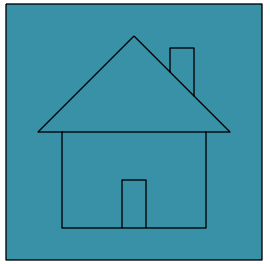


ANSWER

Rectangle

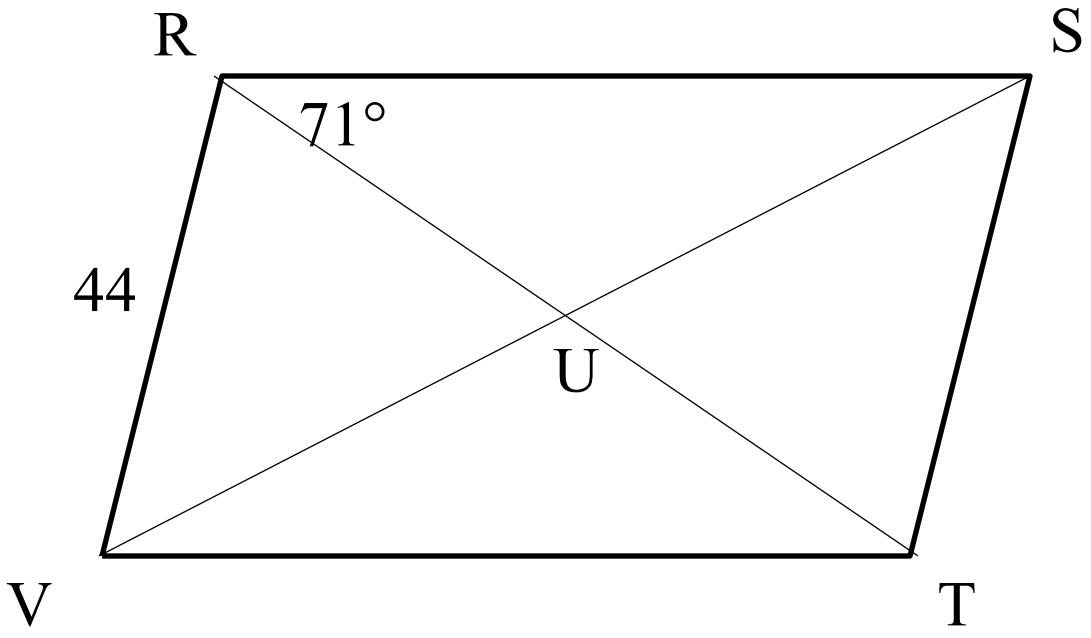
x=10

y=15



8.4 500 Points

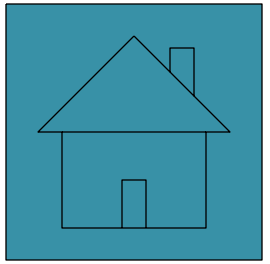
The diagonals of rhombus RSTV intersect at U. Given that m∠URS=71° and RV=44, find each indicated measure.



1. m ∠URV
2. m ∠RVT
3. RT
4. SU

ANSWER

1. 71°
2. 38°
3. About 28.6
4. About 41.6

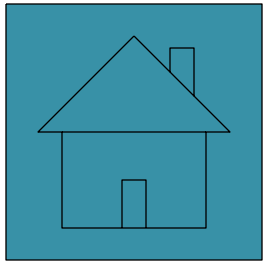


8.5 100 Points

What is the definition of a trapezoid?

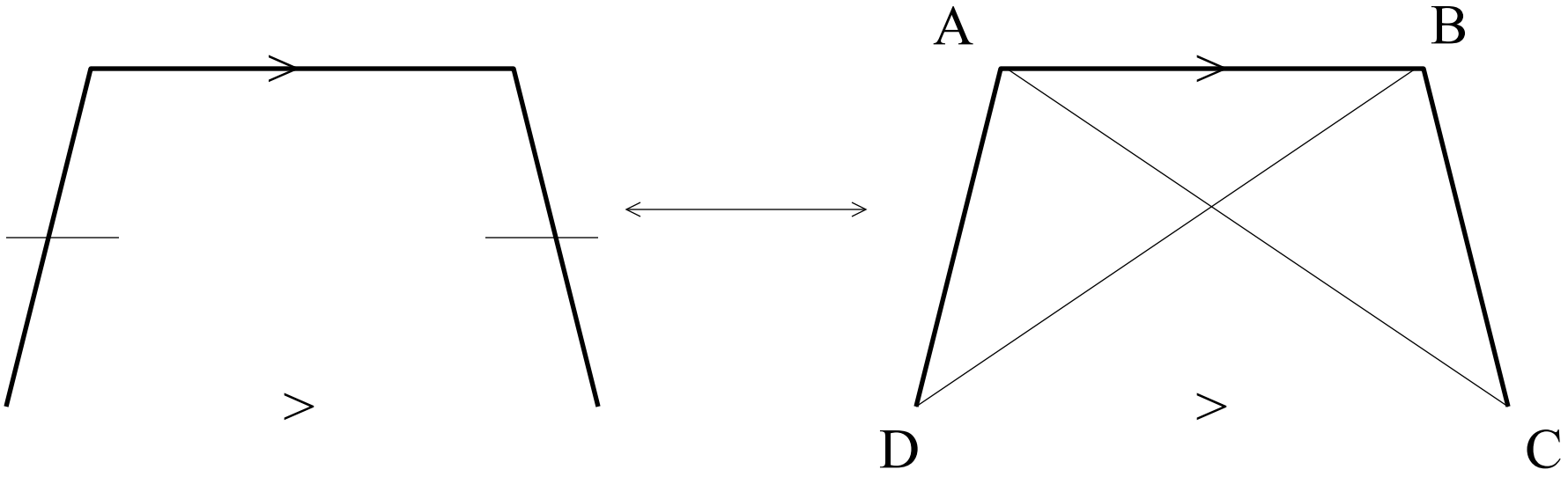
ANSWER

A quadrilateral that has exactly one pair of parallel sides.



8.5 200 Points

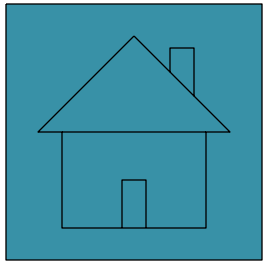
What theorem is illustrated?



$\overline{AC}$ is congruent to $\overline{BD}$

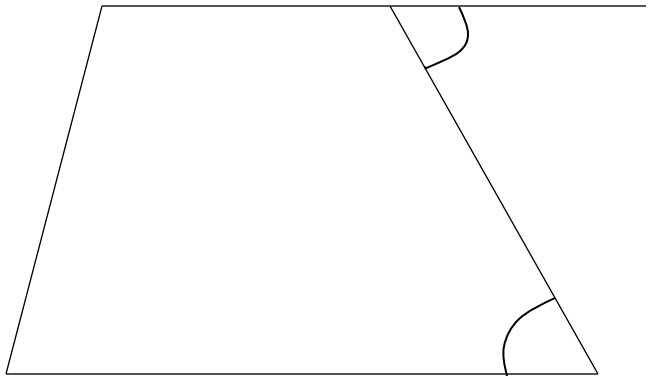
ANSWER

A trapezoid is isosceles if and only if its diagonals are congruent.



8.5 300 Points

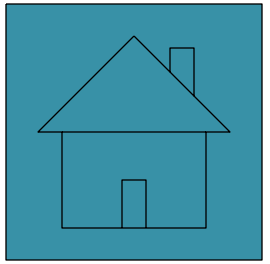
Determine whether the quadrilateral is a trapezoid. If it is, is it an isosceles trapezoid?



ANSWER

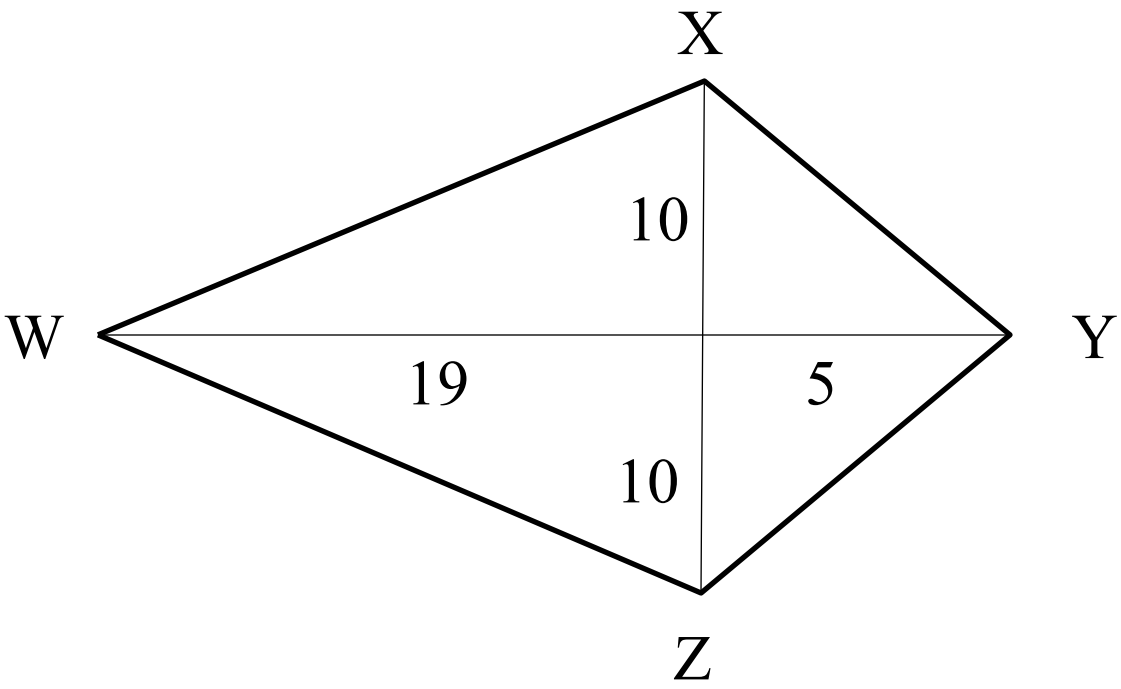
Yes, it is a trapezoid.

No, it is not an isosceles trapezoid.



8.5 400 Points

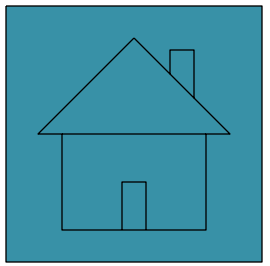
Use the Pythagorean Theorem to find the side lengths of the kite. Write answers in simplest radical form.



ANSWER

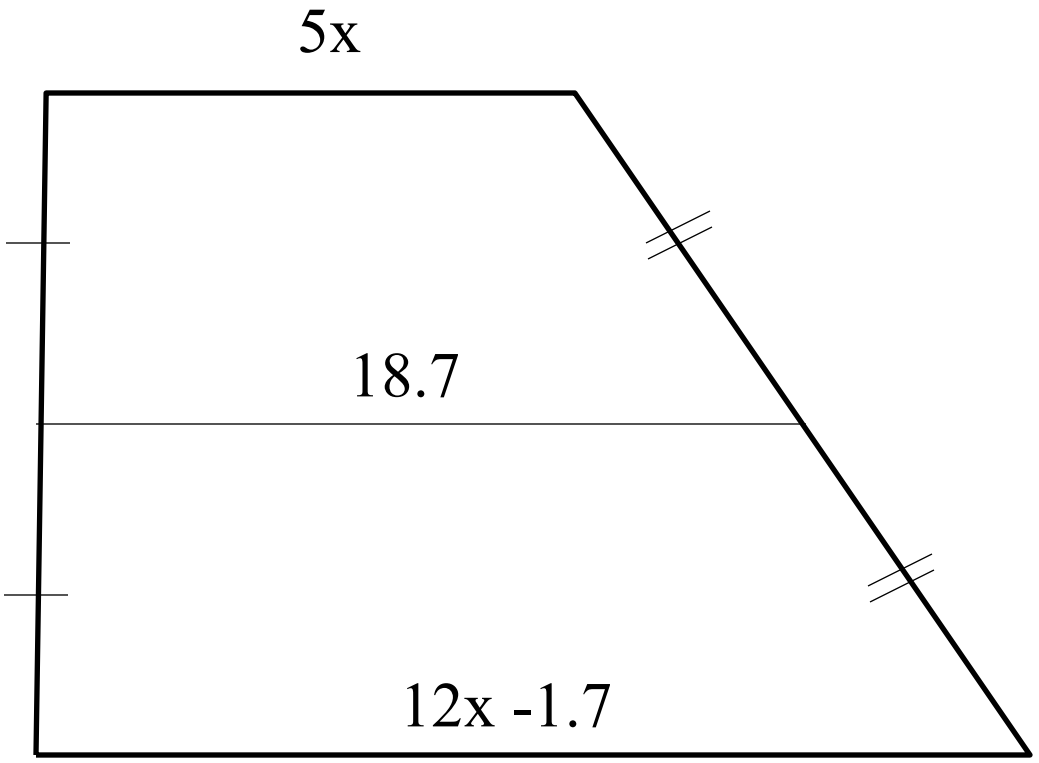
$XY=YZ=5\sqrt{5}$

$WX=WZ=\sqrt{461}$



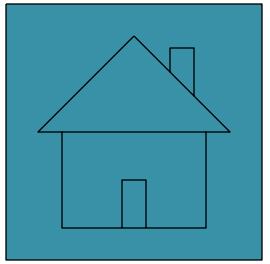
8.5 500 Points

Find x



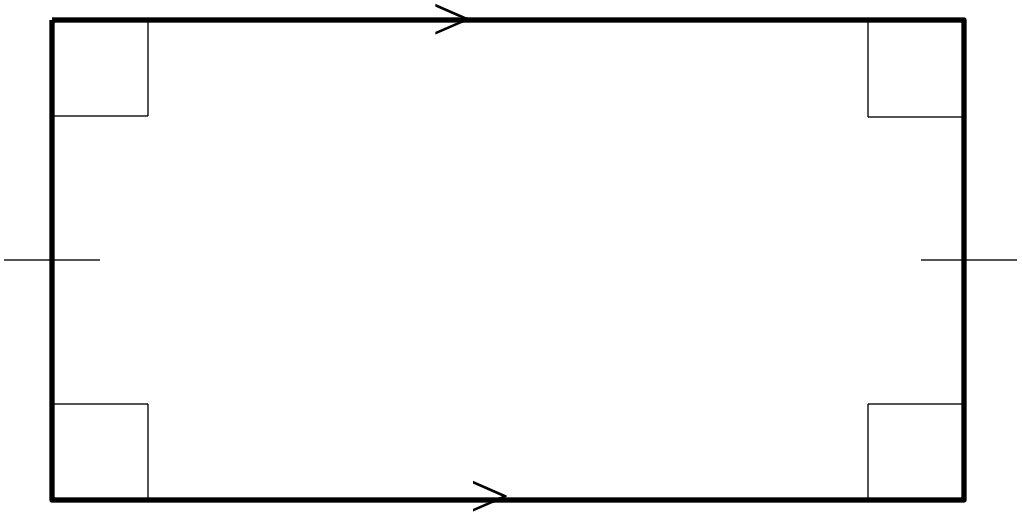
ANSWER

$x=2.3$



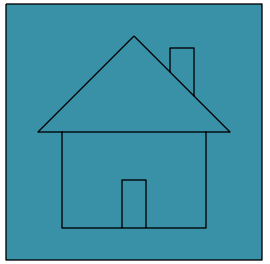
8.6 100 Points

What is the most specific name for the quadrilateral?



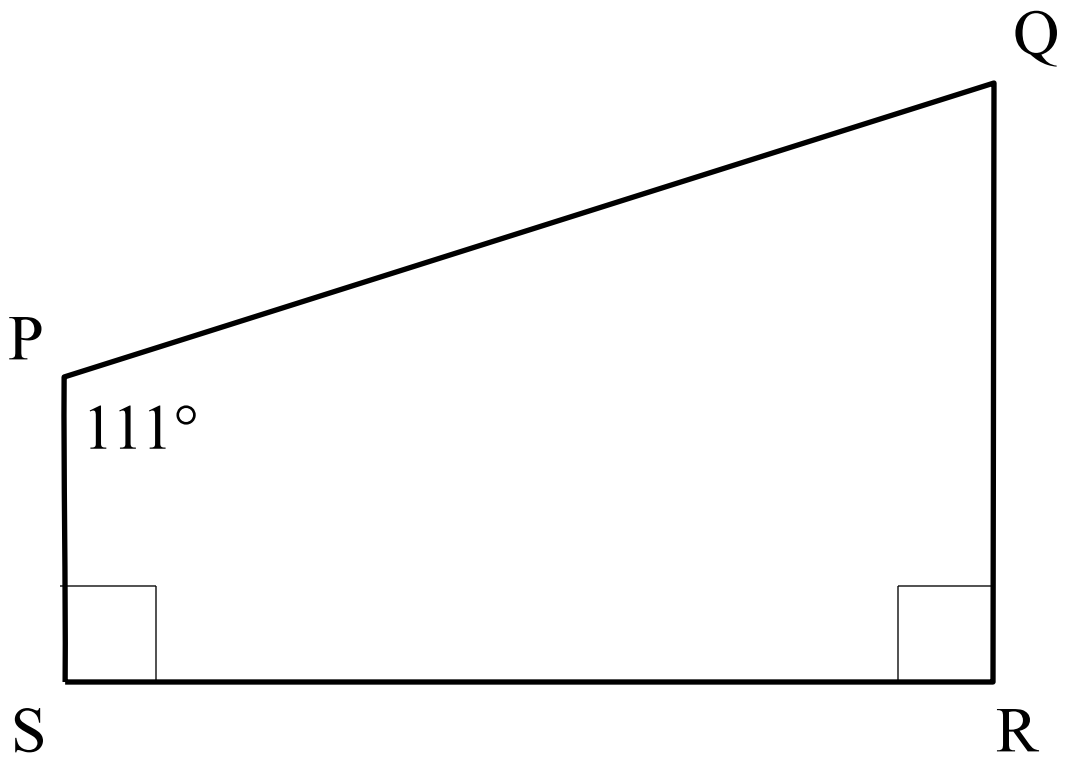
ANSWER

Rectangle



8.6 200 Points

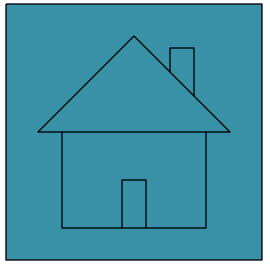
Give the most specific name for the quadrilateral.



ANSWER

Trapezoid

There is one pair of parallel sides.

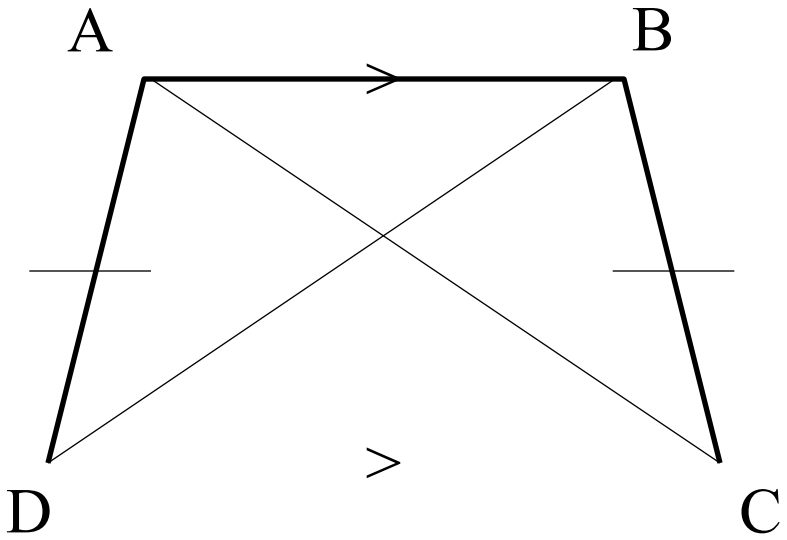


8.6 300 Points

Draw a quadrilateral with congruent diagonals and exactly one pair of congruent sides. What is the most specific name for this quadrilateral?

ANSWER

Isosceles trapezoid

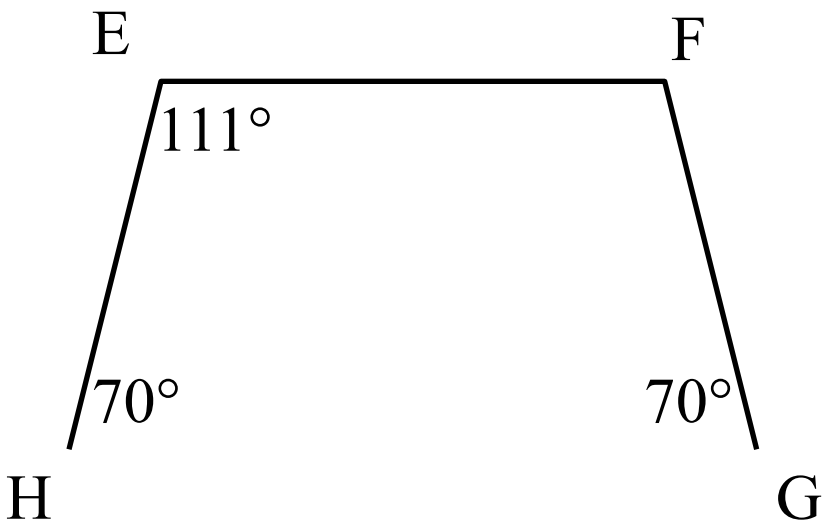


$\overline{AC}$ is congruent to $\overline{BD}$

8.6 400 Points

Tell whether enough information is given in the diagram to classify the quadrilateral by the indicated name. Explain.

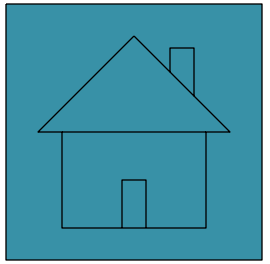
Isosceles trapezoid



ANSWER

No

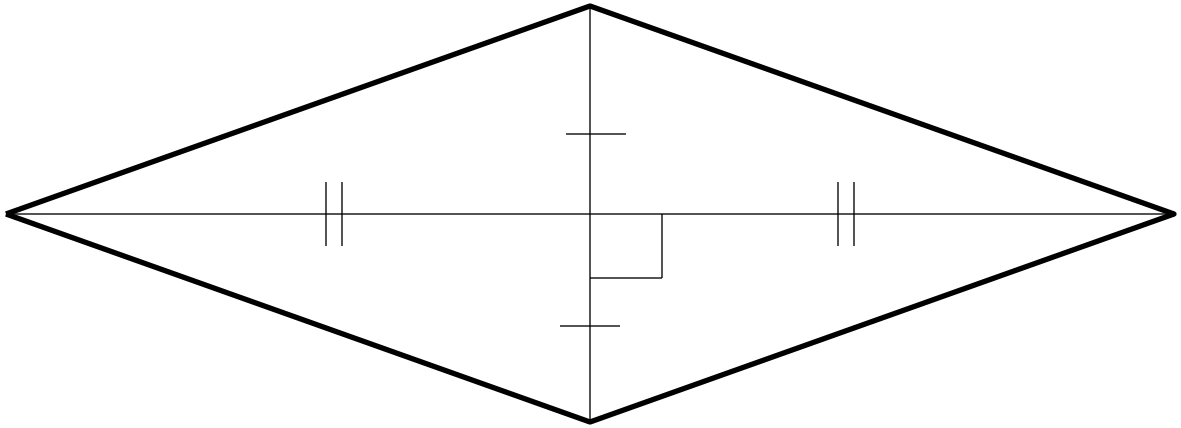
$m\angle F = 109°$ which is not equal to $m\angle E$



8.6 500 Points

Tell whether enough information is given in the diagram to classify the quadrilateral by the indicated name. Explain.

Rhombus

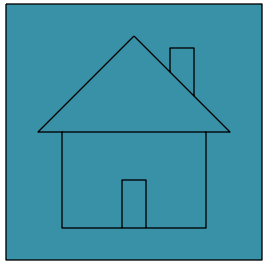


ANSWER

Yes according to the following…

If the diagonals of a quadrilateral bisect each other, then the quadrilateral is a parallelogram

A parallelogram is a rhombus if and only if its diagonals are perpendicular



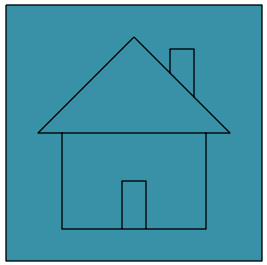
Final Jeopardy

Write a proof.

GIVEN: $\overline{AF}$ is not congruent to $\overline{BC}$

$\angle ABC \cong \angle CDA$

PROVE: ABCF is a trapezoid

ANSWER

Statements	Reasons
1. $\overline{AF}$ is not congruent to $\overline{BC}$	1. Given
2. $\overline{ABC} = \overline{CDA}$	2. Given
3. $\angle CAB \cong \angle ACD$	3. CPCTC
4. $\overline{CF} \parallel \overline{AB}$	4. Alternate Interior Angles Theorem Converse
5. ABCF is a trapezoid	5. Def. of trapezoid