Name: _____ **Class:** _____ **Date:** _____ **ID: A**

5.4 Midsegment of a Trapezoid Homework

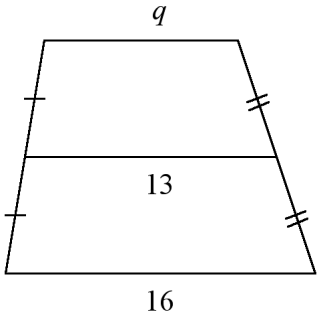
True/False

Indicate whether the statement is true or false.

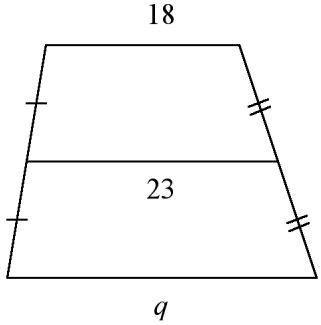
____ The diagonals of an isosceles trapezoid are congruent.

Numeric Response

The figure is a trapezoid. q = _____



The figure is a trapezoid. q = _____



If the midsegment of a trapezoid has length 8 cm, and one of the bases has length 6 cm, then the other base has length _____ cm.

Completion

Complete each statement.

The length of a midsegment of a trapezoid is _____ the lengths of the bases.

The midsegment of a trapezoid is _____ to the two bases.

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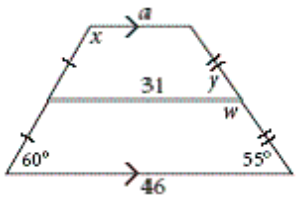
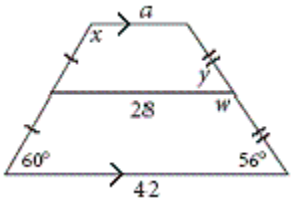
x = _____°
y = _____°
w = _____°
a = _____



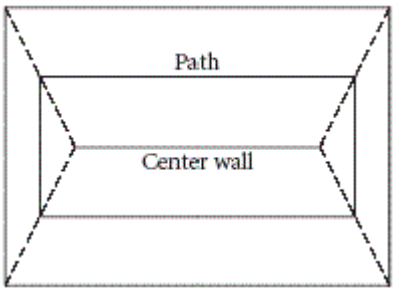
x = _____°
y = _____°
w = _____°
a = _____



Essay

The modern art section of the Museum of Geometric Art is a large rectangular room. The museum directors want to build a wall in the center of the room to create more room for displaying art. The wall will be built so that it is parallel to two of the opposite sides and its ends are equally distant from the other two sides.

Once the center wall is in place, a path will be painted on the floor around it. The path will be created by connecting the midsegments of the triangles and trapezoids formed by connecting the ends of the center wall to the corners of the room. (See the diagram.)



a. If the room measures 80 ft by 100 ft and the wall is 70 ft long, how long will the path be? Does your answer depend on which sides the wall is parallel to? Explain.

b. Now generalize your results. If the room measures a feet by b feet and the center wall is x feet long, how long will the path around the wall be?

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5.4 Midsegment of a Trapezoid Homework
Answer Section

TRUE/FALSE

ANS: T PTS: 1 DIF: Easy REF: Lesson 5.4
OBJ: Define and discover properties of midsegments in triangles and trapezoids
NAT: G.CO.10 TOP: Properties of Midsegments
KEY: isosceles trapezoid | diagonal | congruent

NUMERIC RESPONSE

ANS: 10

PTS: 1 DIF: Moderate REF: Lesson 5.4
OBJ: Define and discover properties of midsegments in triangles and trapezoids
NAT: G.CO.10 TOP: Properties of Midsegments KEY: trapezoid
ANS: 28

PTS: 1 DIF: Moderate REF: Lesson 5.4
OBJ: Define and discover properties of midsegments in triangles and trapezoids
NAT: G.CO.10 TOP: Properties of Midsegments KEY: trapezoid
ANS: 10

PTS: 1 DIF: Easy REF: Lesson 5.4
OBJ: Define and discover properties of midsegments in triangles and trapezoids
NAT: G.CO.10 TOP: Properties of Midsegments KEY: trapezoid | midsegment | base

COMPLETION

ANS:
the average of
average

PTS: 1 DIF: Easy REF: Lesson 5.4
OBJ: Define and discover properties of midsegments in triangles and trapezoids
TOP: Properties of Midsegments KEY: trapezoid | midsegment

ID: A

ANS: parallel

PTS: 1 DIF: Easy REF: Lesson 5.4
OBJ: Define and discover properties of midsegments in triangles and trapezoids
NAT: G.CO.10 TOP: Properties of Midsegments KEY: trapezoid | midsegment
ANS: 120, 55, 125, 16

PTS: 1 DIF: Moderate REF: Lesson 5.4
OBJ: Define and discover properties of midsegments in triangles and trapezoids
NAT: G.CO.10 TOP: Properties of Midsegments KEY: trapezoid
ANS: 120, 56, 124, 14

PTS: 1 DIF: Moderate REF: Lesson 5.4
OBJ: Define and discover properties of midsegments in triangles and trapezoids
NAT: G.CO.10 TOP: Properties of Midsegments KEY: trapezoid

ID: A

ESSAY

ANS:

5 Points

Answer and explanation are clear and correct.

a. The path will be 250 feet long. Sample explanation: It doesn't matter which sides the wall is parallel to. If it is parallel to the 100 ft wall, its length will be $2\left[\frac{1}{2}(100+70)\right]+2\left[\frac{1}{2}(80)\right]=100+70+80=250$ ft and if it is parallel to the 80 ft wall, its length will be $2\left[\frac{1}{2}(80+70)\right]+2\left[\frac{1}{2}(100)\right]=80+70+100=250$ ft

b. $a + b + x$ ft

3 Points

a. Answer demonstrates the correct use of midsegment properties. Part of the answer is incorrect due to algebraic error.

b. Answer is attempted and student clearly tried to use midsegment properties, but answer is incorrect due to algebraic error.

1 Point

Answers are incorrect and work includes significant errors. However, work indicates that student knows at least one of the midsegment properties.

PTS: 5 DIF: Challenging REF: Lesson 5.4
OBJ: Define and discover properties of midsegments in triangles and trapezoids
NAT: G.CO.10 TOP: Properties of Midsegments KEY: midsegments | properties