

7.5 Trapezoids & Isosceles Trapezoids CYU

Use when you get it right all by yourself
S Use when you did it all by yourself, but made a silly mistake
H Use when you could do it alone with a little help from teacher or peer
G Use when you completed the problem in a group
X Use when a question was attempted but wrong (get help)
N Use when a question was not even attempted

CONCEPTS	BASIC	INTERMEDIATE	ADVANCED
Classifying quadrilaterals as trapezoids	1, 2		
Determining if a trapezoid is isosceles	1, 2		
Applying properties of isosceles trapezoids	3, 4		
Midsegment of a trapezoid	5, 6	7, 8	

Show that the quadrilateral with the given vertices is a trapezoid. Then decide whether it is isosceles.

1. $W(1, 4), X(1, 8), Y(-3, 9), Z(-3, 3)$

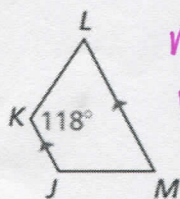
$m\overline{YZ} = m\overline{XW}$
 $m\overline{XY} \neq m\overline{WZ}$
 $XY = WZ$
 isosceles

2. $D(-3, 3), E(-1, 1), F(1, -4), G(-3, 0)$

$m\overline{DE} = m\overline{FG}$
 $m\overline{EF} \neq m\overline{DG}$
 $EF \neq DG$
 not isosceles

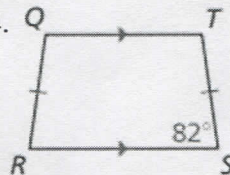
Find the measure of each angle in the isosceles trapezoid.

- 3.



$m\angle L = m\angle M = 62^\circ$
 $m\angle K = m\angle J = 118^\circ$

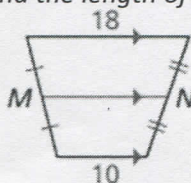
- 4.



$m\angle Q = m\angle T = 98^\circ$
 $m\angle R = m\angle S = 82^\circ$

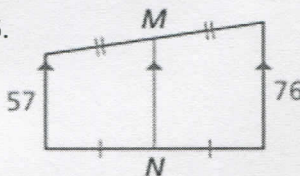
Find the length of the midsegment of the trapezoid.

- 5.



14

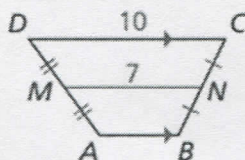
- 6.



66.5

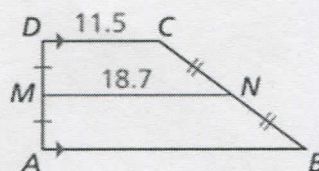
Find AB.

- 7.



4

- 8.



25.9

Find the length of the midsegment of the trapezoid with the given vertices.

9. $A(2, 0), B(8, -4), C(12, 2), D(0, 10)$

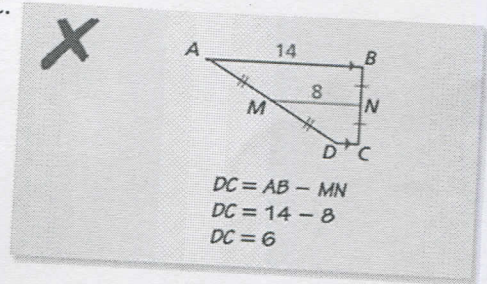
10. $S(-2, 4), T(-2, -4), U(3, -2), V(13, 10)$

$3\sqrt{13}$

$2\sqrt{29}$

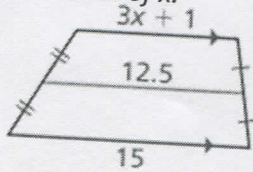
11. **ERROR ANALYSIS** Describe and correct the error in finding DC.

$MN = \frac{1}{2}(AB + DC)$
 $DC = 2(MN) - AB$
 $= 2$



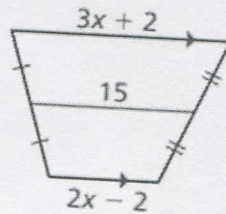
Find the value of x.

12.



3

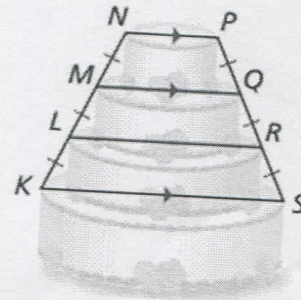
13.



6

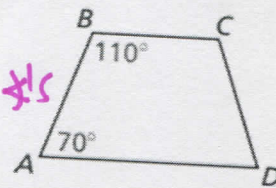
14. **MODELING WITH MATHEMATICS** In the diagram, NP = 8 inches, and LR = 20 inches. What is the diameter of the bottom layer of the cake.

26 in



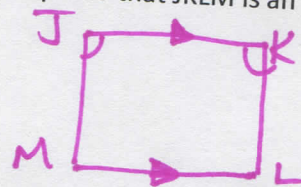
15. Determine which pairs of segments or angles must be congruent so that you can prove that ABCD is an isosceles trapezoid. Explain your reasoning. (There may be more than one right answer.)

$\angle A \cong \angle D$ or $\angle B \cong \angle C$; $\overline{BC} \parallel \overline{AD}$; $\overline{AB} \cong \overline{DC}$



16. **MAKING AN ARGUMENT** Your cousin claims there is enough information to prove that JKLM is an isosceles trapezoid. Is your cousin correct? Explain.

no; It could be a square or rectangle.



CYU Reflection: How far can you go: basic, intermediate, or advanced?

Rate your mastery level!

How confident are you with the skills this CYU covered? Circle the score you would give yourself.

