

Trapezoids and Kites

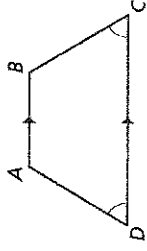
1. Describe the differences between a trapezoid and a kite

For #2 - 5, use the diagram to answer the following questions. Explain your reasoning.

2. Is there enough information to prove that trapezoid ABCD is isosceles?

Yes/No

Reasoning:



3. Is there enough information to prove that $\overline{AB} \cong \overline{DC}$?

Yes/No

Reasoning:

4. Is there enough information to prove that the non-parallel sides of trapezoid ABCD are congruent?

Yes/No

Reasoning:

5. Is there enough information to prove that the legs of trapezoid ABCD are congruent?

Yes/No

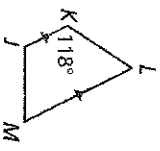
Reasoning:

For #6 - 7, find the measure of each angle in the isosceles trapezoid.

6. $m\angle J =$ _____

$m\angle L =$ _____

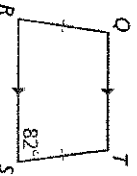
$m\angle M =$ _____



7. $m\angle R =$ _____

$m\angle T =$ _____

$m\angle Q =$ _____



For #8 - 9, show that the quadrilateral with the given vertices is a trapezoid. Then decide whether it is isosceles. Show all work, including formulas.

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

Trapezoid? Yes/No Isosceles? Yes/No

Slope_{wx} = _____

Slope_{xy} = _____

Slope_{yz} = _____

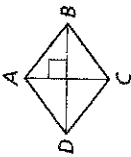
Slope_{wz} = _____

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

Trapezoid? Yes/No Isosceles? Yes/No

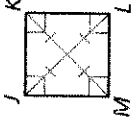
For #23 - 24, tell whether enough information is given in the diagram to classify the quadrilateral by the indicated name. Explain.

23. Rhombus Yes/No



Reasoning:

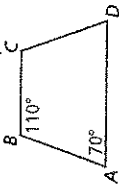
24. Square Yes/No



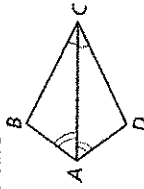
Reasoning:

For #25 - 28, determine which pairs of segments or angles must be congruent so that you can prove that ABCD is the indicated quadrilateral. Explain your reasoning.

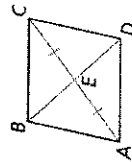
25. Isosceles Trapezoid



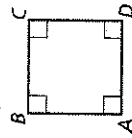
26. Kite



27. Parallelogram

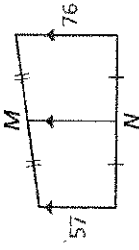


28. Square

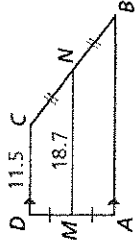


For #10 - 11, find the length of the specified segment of the trapezoid

10. $MN =$ _____

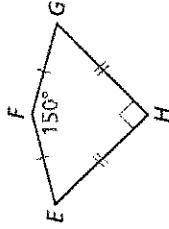


11. $AB =$ _____

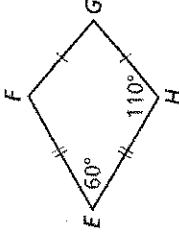


For # 12 - 13, find $m\angle G$ in kite EFGH

12. $m\angle G =$ _____



13. $m\angle G =$ _____



14. Describe and correct the error in finding $m\angle A$.

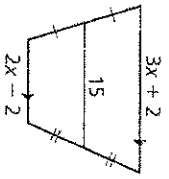
X

Opposite angles of a kite are congruent, so $m\angle A = 50^\circ$.



15. Find the value of x .

$x =$ _____



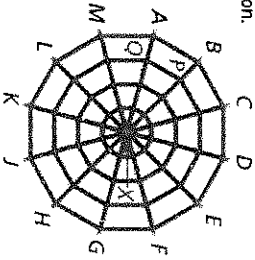
16. The bases of a trapezoid lie on the lines $y = 2x + 7$ and $y = 2x - 5$. Write the equation of the line that contains the midsegment of the trapezoid.

Equation of Midsegment: _____

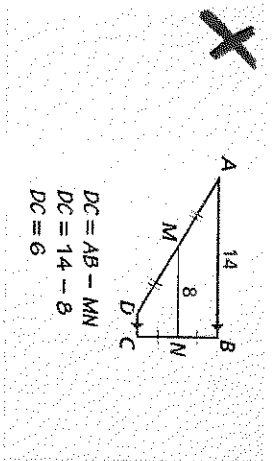
17. A plastic spiderweb is made in the shape of a regular dodecagon (12-sided polygon). $AB \parallel PQ$, and X is equidistant from the vertices of the dodecagon.

What is the measure of each interior angle of $ABPQ$?

- $m\angle A =$ _____
- $m\angle B =$ _____
- $m\angle P =$ _____
- $m\angle Q =$ _____

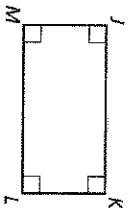


18. Describe and correct the error in finding DC .



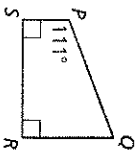
For #19 - 22, give the most specific name for the quadrilateral. Explain your reasoning.

19. _____



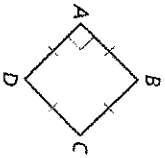
Reasoning: _____

20. _____



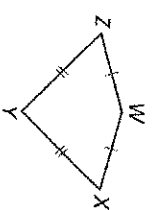
Reasoning: _____

21. _____



Reasoning: _____

22. _____



Reasoning: _____