

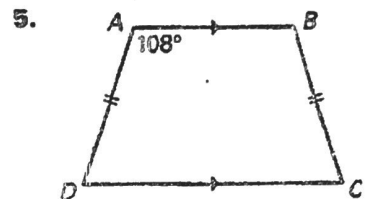
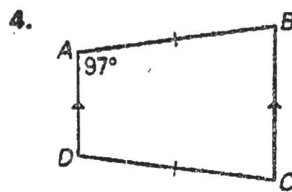
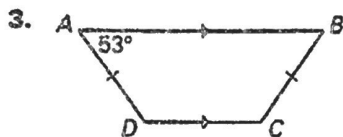
# Properties of Trapezoids and Kites

Points  $J$ ,  $K$ ,  $L$ , and  $M$  are the vertices of a quadrilateral. Determine whether  $JKLM$  is a trapezoid.

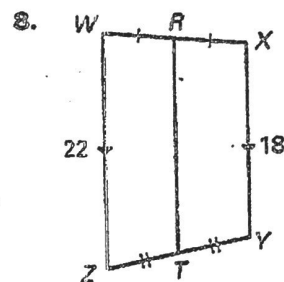
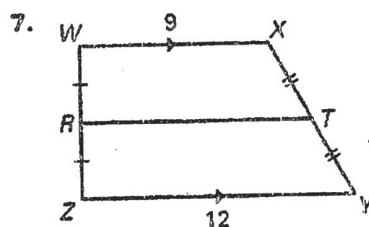
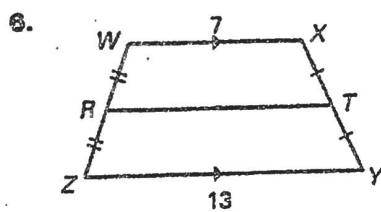
1.  $J(-1, -1)$ ,  $K(0, 3)$ ,  $L(3, 3)$ ,  $M(4, -1)$

2.  $J(-4, -2)$ ,  $K(-4, 3)$ ,  $L(2, 3)$ ,  $M(3, -5)$

Find  $m\angle B$ ,  $m\angle C$ , and  $m\angle D$ .



Find the length of the midsegment  $\overline{RT}$ .

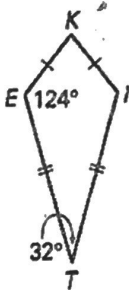


Tell whether the statement is *always*, *sometimes*, or *never* true.

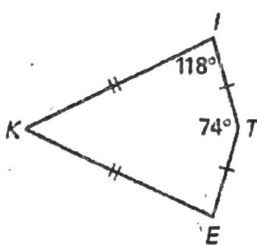
9. A trapezoid is a parallelogram.
10. The bases of a trapezoid are parallel.
11. The base angles of an isosceles trapezoid are congruent.
12. The legs of a trapezoid are congruent.

**KITE** is a kite. Find  $m\angle K$ .

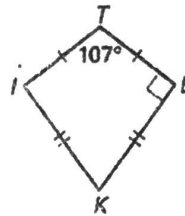
13.



14.

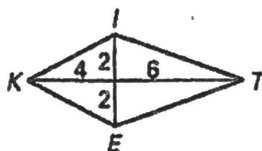


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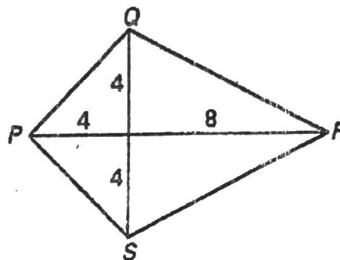


Use Theorem 5.33 and the Pythagorean Theorem to find the side lengths of the kite. Write the lengths in simplest radical form.

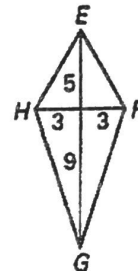
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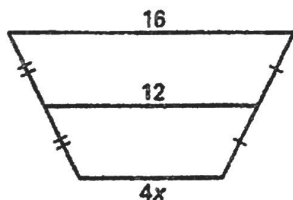


18.

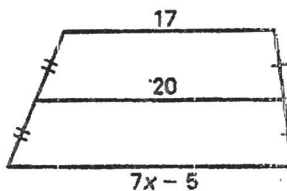


Find the value of  $x$ .

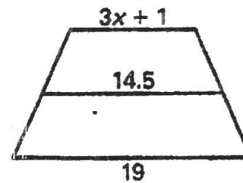
19.



20.



21.



22. Complete the proof.

GIVEN:  $\overline{DE} \parallel \overline{AV}$ ,  
 $\triangle DAV \cong \triangle EVA$

PROVE:  $DAVE$  is an isosceles trapezoid.



Statements	Reasons
1. $\overline{DE} \parallel \overline{AV}$	1.
2. $DAVE$ is a trapezoid.	2.
3.	3. Given
4.	4. Corresponding parts of $\cong \triangle$ are $\cong$ .
5. $DAVE$ is an isosceles trapezoid.	5.