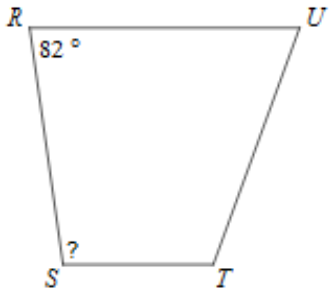
Bellwork: Tuesday, Jan 20

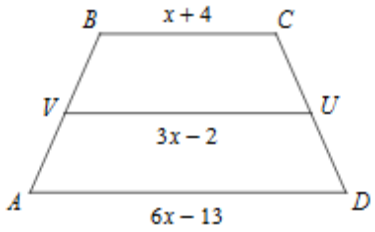
1. Find the measure of angle S



2. Find the length of the diagonal indicated.

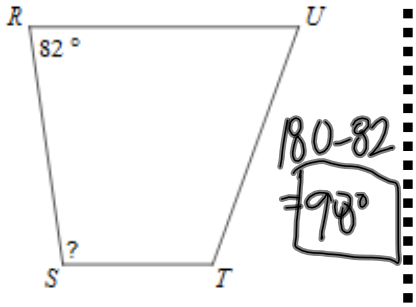
$KM = 15x - 3$
$LN = 10x + 2$
Find KM

Find the length of the midsegment.



Bellwork: Tuesday, Jan 20

1. Find the measure of angle S

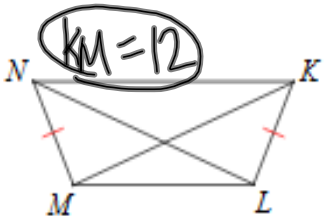


180-82
=98°

2. Find the length of the diagonal indicated.

$KM = 15x - 3$
$LN = 10x + 2$
Find KM

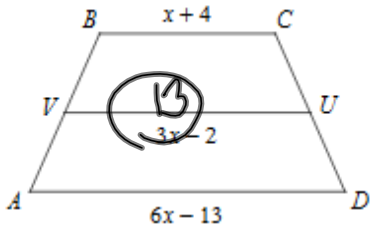
$15x - 3 = 10x + 2$
$x = 1$



Find the length of the midsegment.

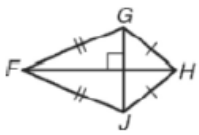
$2 \cdot (3x-2) = \frac{x+4+6x-13}{2} \cdot 2$

$2(3x-2) = 7x-9$
$6x-4 = 7x-9$ $x=5$

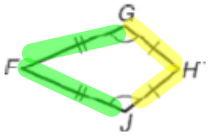


KITE: A quadrilateral w/ exactly 2 pairs of consecutive congruent sides.

KITE PROPERTIES



If a quadrilateral is a kite, then ...
the diagonals are perpendicular.
↓
Four right ∠s

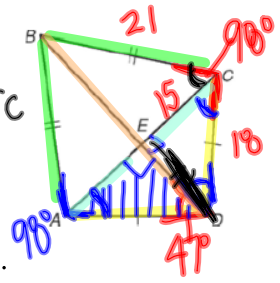


If a quadrilateral is a kite, then ...
exactly one pair of opposite angles is congruent.
*∠s formed b/w 2 non-congruent sides.

Examples

In kite $ABCD$, $m\angle BCD = 98°$, $m\angle ADE = 47°$, $BC = 21$, $AD = 18$, and $CE = 15$.

8. $m\angle BAD =$ 98°
9. $m\angle CDE =$ 47° CPCTC
10. $m\angle AED =$ 90°
11. $m\angle DAE =$ 43° 180−90−47
12. $m\angle DCE =$ 43°



13. $m\angle BCE =$ 98−43 = 55°
14. $AB =$ 21
15. $CD =$ 18
16. $ED =$ $\sqrt{99}$
17. $EB =$ $\sqrt{21^2 - 15^2}$ $= \sqrt{441-225}$ $= \sqrt{216}$

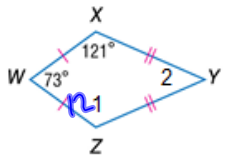
$\triangle BAD \cong \triangle BCD$, by SAS/SSS
$\triangle AED \cong \triangle CAD$ by SAS
$\triangle ADE \cong \triangle CBE$ by SSS

$a^2 + b^2 = c^2$
$a^2 = c^2 - b^2$
$a = \sqrt{c^2 - b^2}$

part of a rt. $\triangle$
$ED = \sqrt{18^2 - 15^2}$
$= \sqrt{324 - 225}$
$\sqrt{99}$

Find the measure of each numbered angle.

18.

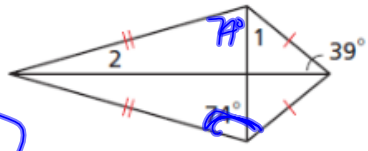


$m\angle 1 = 121°$

$m\angle 2 = 360 - 121 - 121 - 73$

$= 45°$

19.



$m\angle 1 = 180 - 90 - 39$

$= 51°$

$m\angle 2 = 180 - 90 - 74$

$= 16°$

20.

$3x = 48$

$x = 16$

$9 \cdot 16 = m\angle 1$

$m\angle 1 = 144°$