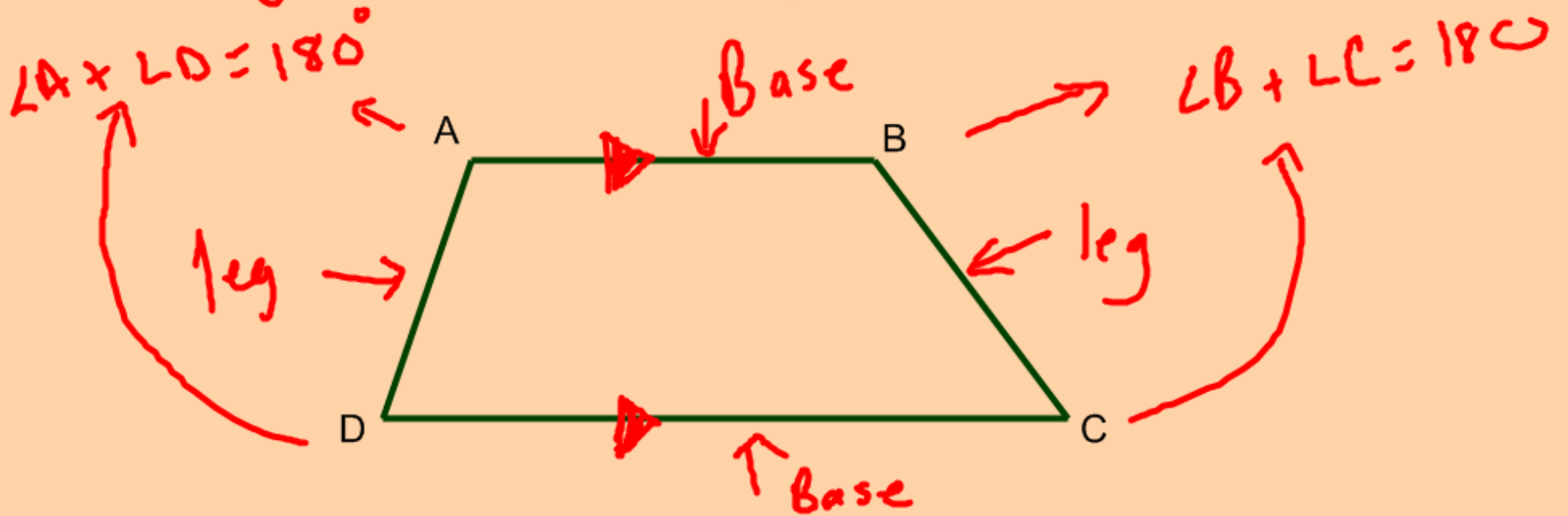# Trapezoids and Kites

You will be able to recognize and apply properties of trapezoids and kites.

Trapezoid   A quadrilateral with
exactly one pair of parallel sides

$\angle A + \angle D = 180°$

$\angle B + \angle C = 180$

Base

leg

leg

A   B

D   C

Base

Bases   the 2 // sides

Legs   the other 2 sides

Isosceles Trapezoid

legs are $\cong$ _____

diagonals are $\cong$ _____

both pairs of base angles are $\cong$ _____

$\angle A \cong \angle B$

$\angle D \cong \angle C$

Find $m\angle D$

$m\angle A = 79°$ supp
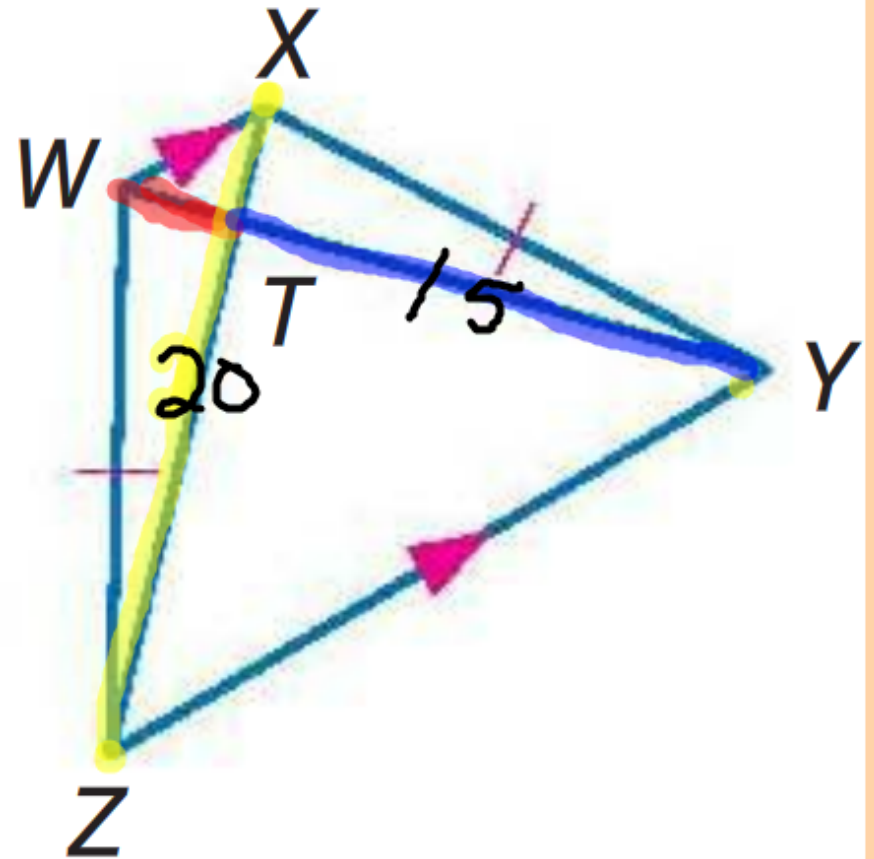
A

180
-101

79°

base

B

79°

101°

101°

D

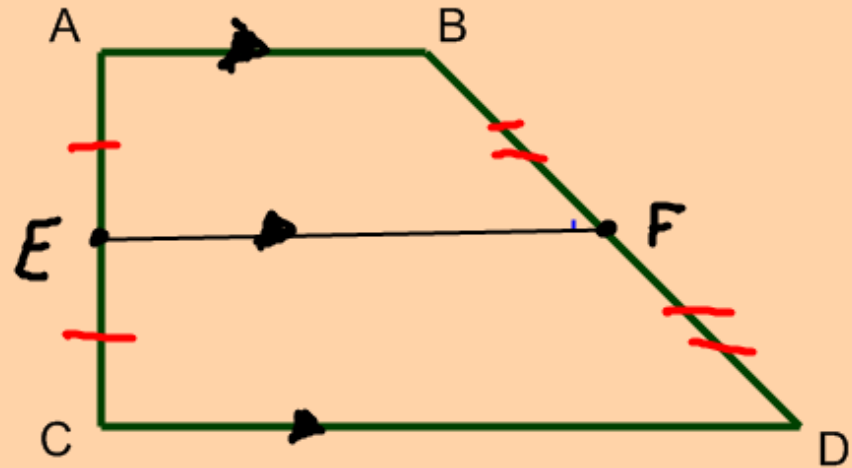base

C
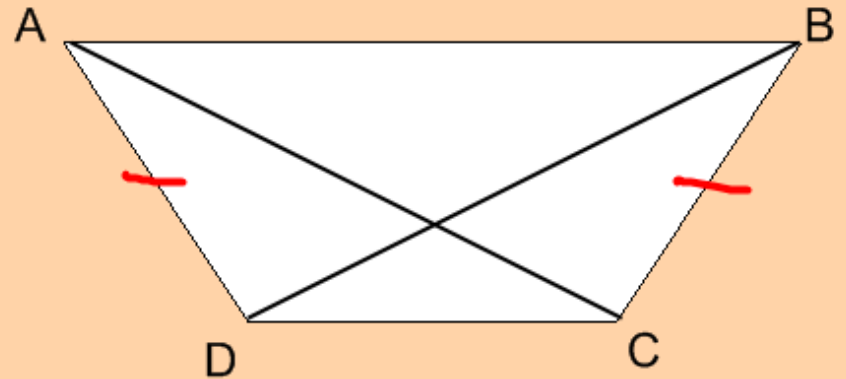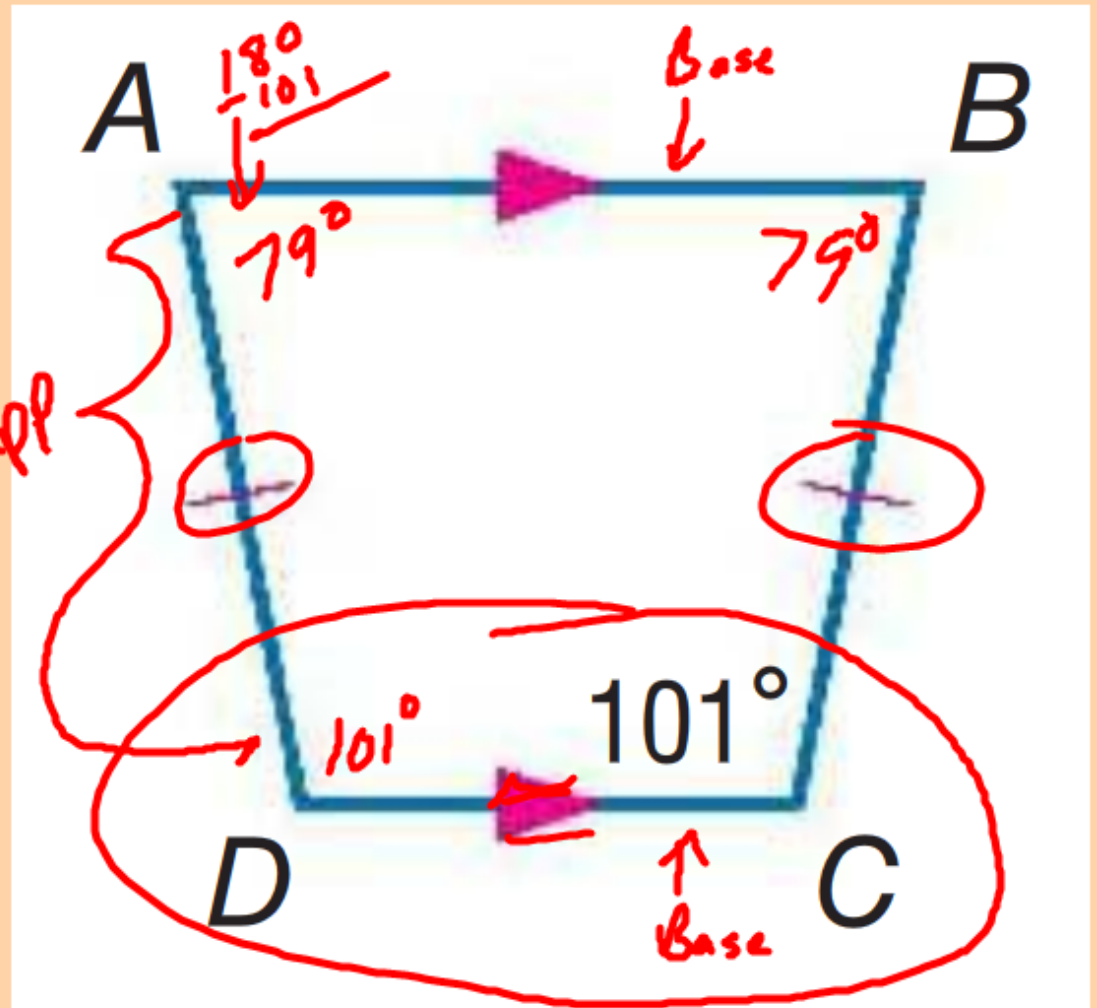
Find

⑤

WT, if $ZX = 20$ and $TY = 15$
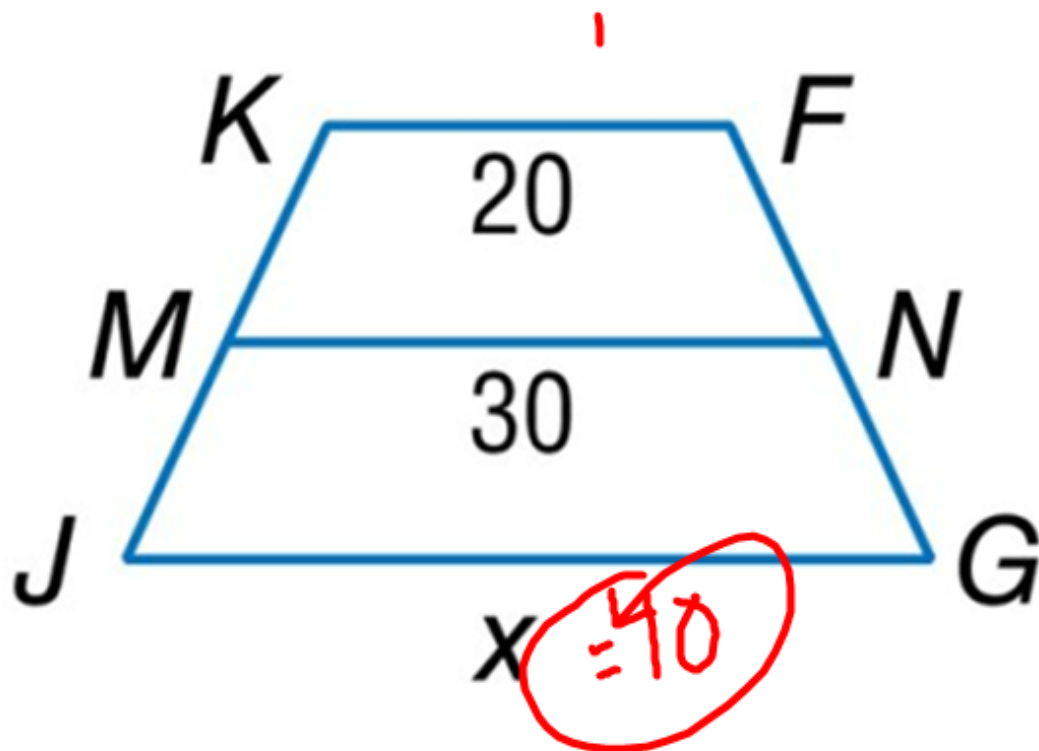
Median
(midsegment)

Connects the __Midpoints__ of the legs

Will be __Parallel__ to the bases

Length will be: average of the __bases__
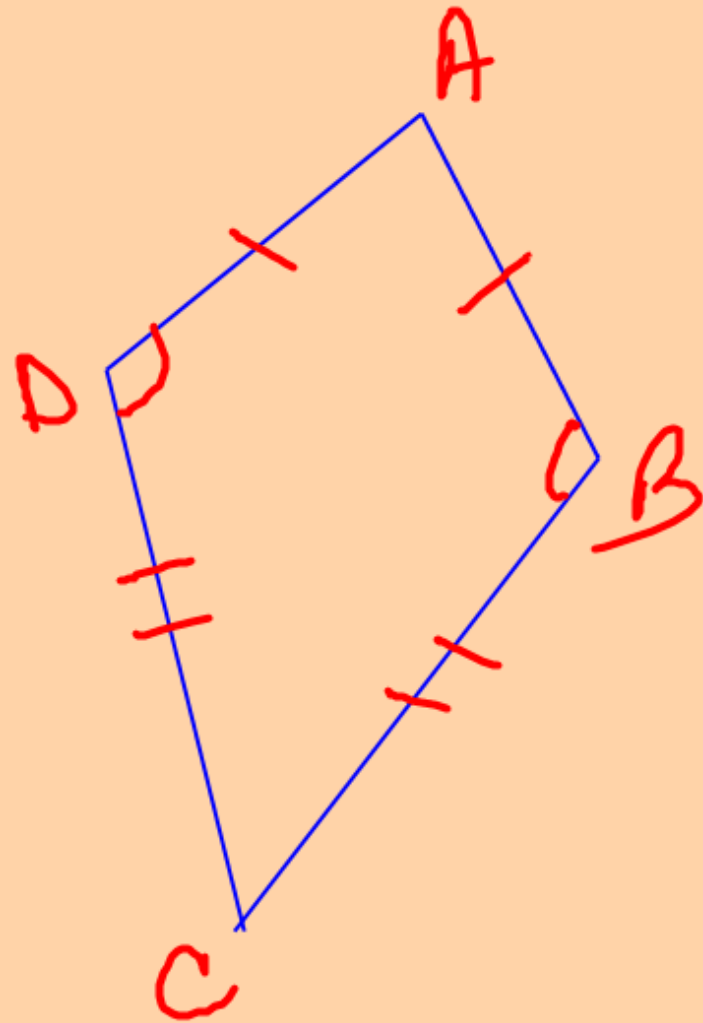
$$EF = \frac{AB + CD}{2}$$

In the figure, $\overline{MN}$ is the midsegment of trapezoid *FGJK*. What is the value of *x*?

K   F

20

M   N

30

J   G

$x = 40$

Kite
A quadrilateral with 2 distinct pairs of adjacent $\cong$ sides

only 1 pair of $\cong$ $\angle$'s

$\angle D \cong \angle B$

Diagonals are _____ $\perp$
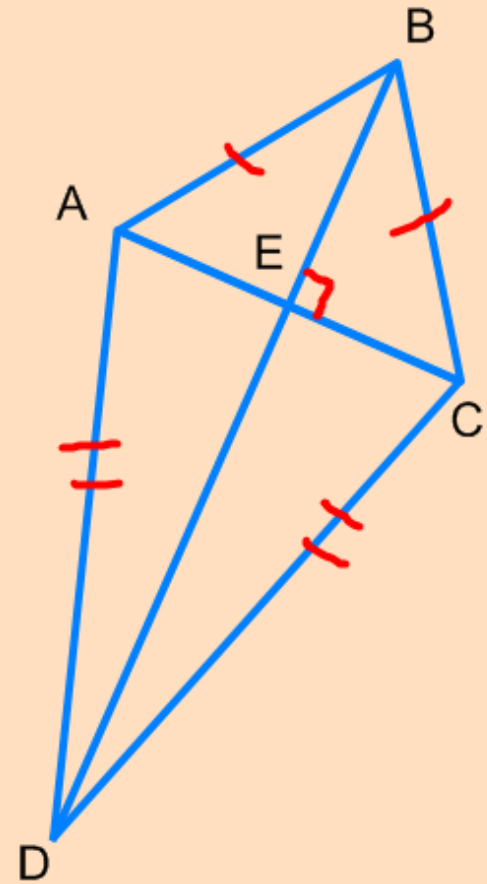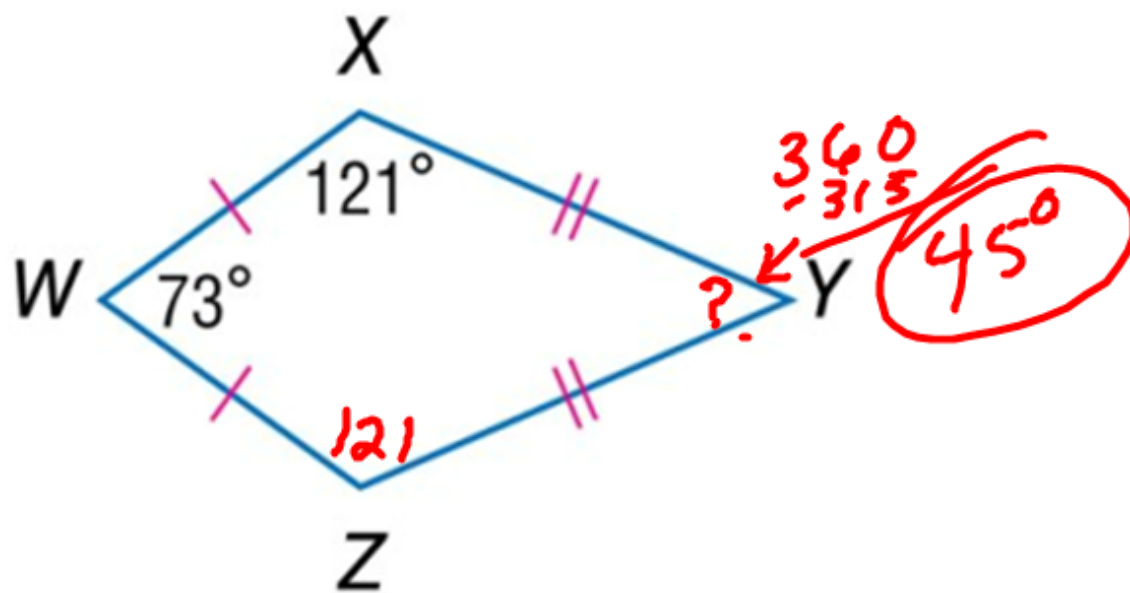
Makes 2 pairs of _____ $\cong$ $\triangle$'s

$\triangle AEB \cong \triangle CEB$

$\triangle AEO \cong \triangle CED$

EXAMPLE 4 **Use Properties of Kites**

A. If *WXYZ* is a kite, find *m∠XYZ*.

X

121°

W   73°

? Y

Z

121

$$\frac{360}{-315}$$

45°

121
121
73
___
315

Assignment

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#'s 8-11, 16-20 evens, 26, 27, 53-57