NOTES 7.5: TRAPEZOIDS & KITES
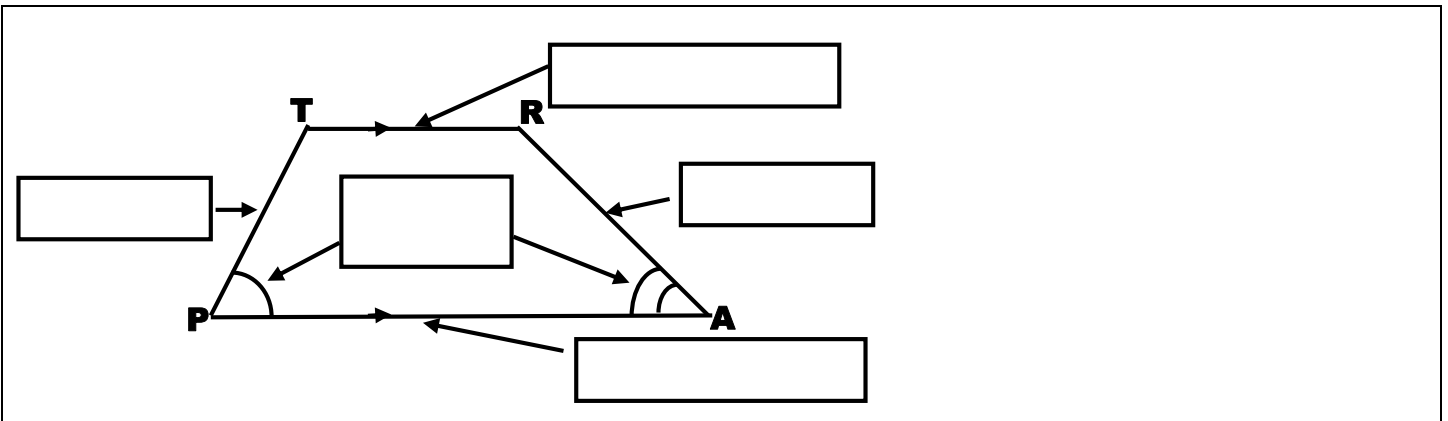
Objective:_____

_____

TRAPEZOID:

BASES:

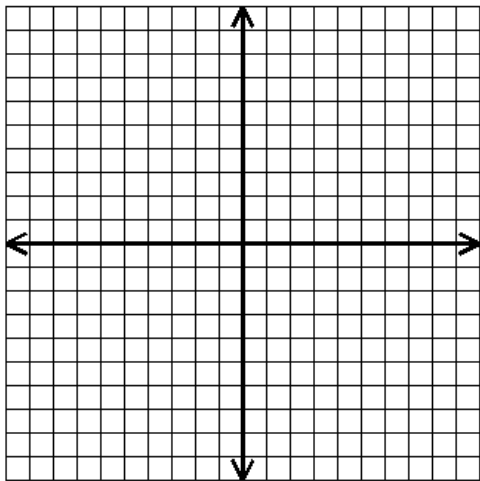***LEGS:***

BASE ANGLES:

ISOSCELES TRAPEZOID:

The base angels of an isosceles trapezoid are congruent.

The diagonals of an isosceles trapezoid also have a special relationship…

Graph the isosceles trapezoid $MATH$ by plotting the points:
$M(0, -2)$; $A(0, 5)$; $T(6, 7)$; $H(6, -4)$.

Name the diagonals of trapezoid $MATH$:

_____

Find the length of each diagonal:
$MT =$

$AH =$

What can you say about the length of each diagonal?
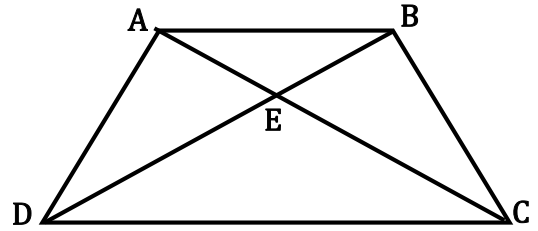
What conclusion can you make?

EXAMPLE 1:

ABCD is an isosceles trapezoid. Decide whether each statement is TRUE or FALSE and explain.
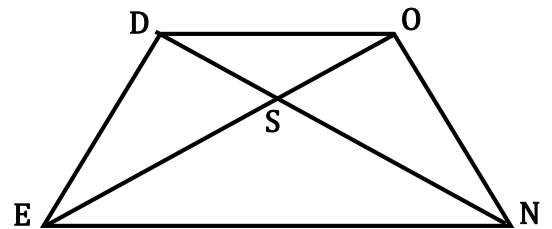
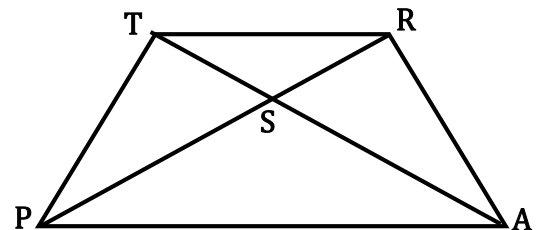a) $AC = BD$

b) $\overline{AD} \cong \overline{BC}$

c) $\overline{CA}$ and $\overline{BD}$ bisect each other

EXAMPLE 2:

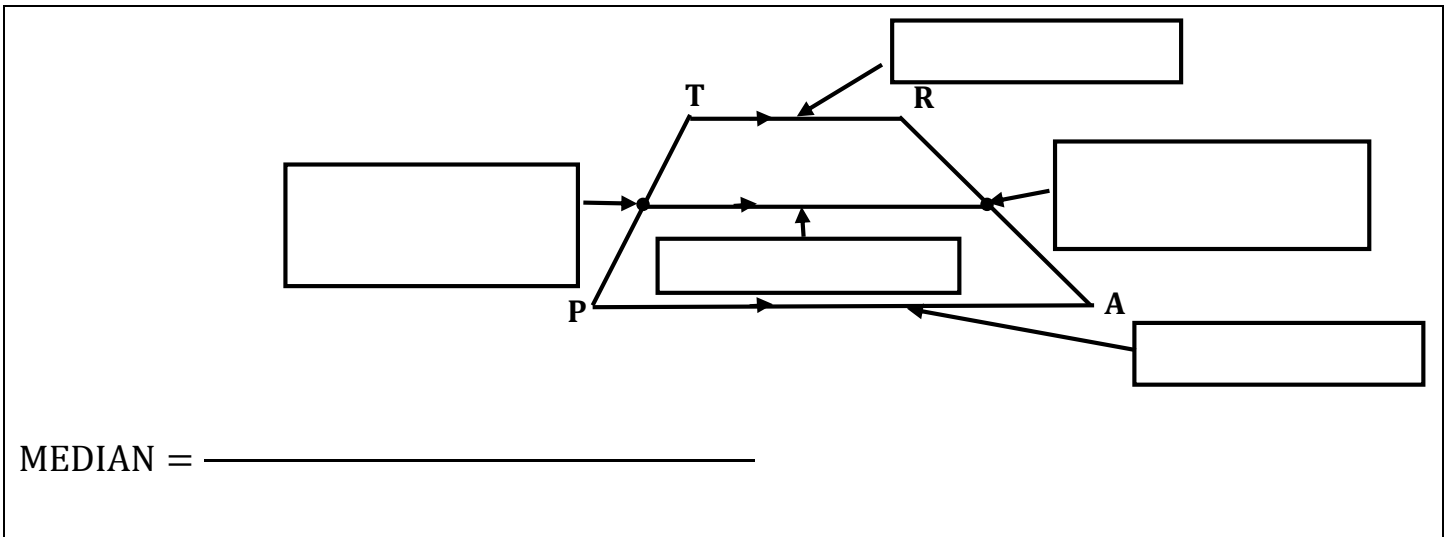DONE is an isosceles trapezoid. $m\angle EDO = 110°$ and $m\angle DEN = (15x - 5)°$. Find the value of 'x'.

EXAMPLE 3:

TRAP is an isosceles trapezoid. $PR = 3x - 7$ and $TA = 20$. Find the value of 'x'.
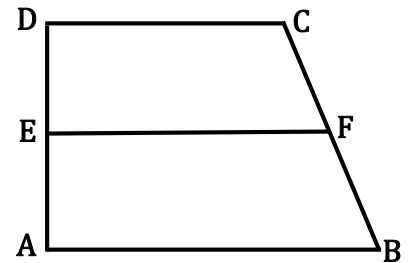
Notes 7.5 (Continued)
MEDIAN:

MEDIAN = ─────────────────

EXAMPLE 4:

In trapezoid ABCD, $\overline{EF}$ is a median. Find each of the following.

a) AB $= 25$, DC $= 13$, EF $=$ _____

b) AE $= 11$, FB $= 8$, AD $=$ _____, BC $=$ _____

c) AB $= 29$, EF $= 24$, DC $=$ _____

d) AB $= 7y + 6$, EF $= 5y - 3$, DC $= y - 2$, $y =$ _____

EXAMPLE 5:

Find the value of 'x' for the trapezoid.
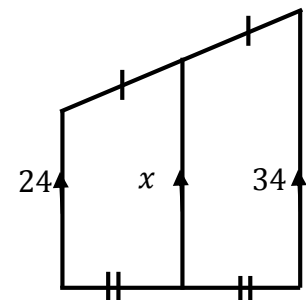
EXAMPLE 6:

Find the value of 'x' for the trapezoid.

12

$2x + 3$

30
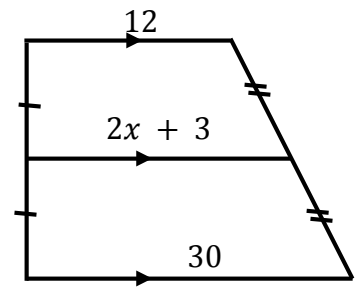
To summarize, what can we say about all trapezoids?

1)_____

2)_____

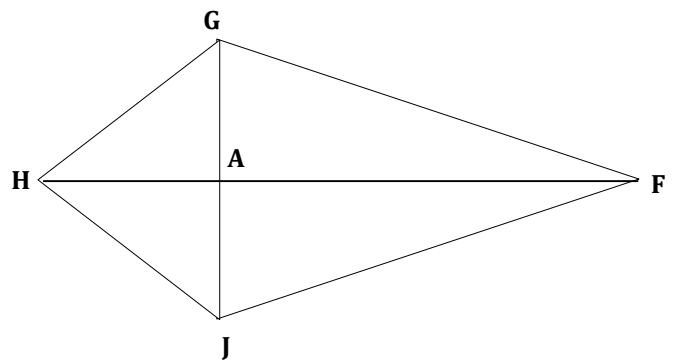In addition to these, what can we say about isosceles trapezoids?

1)_____

2)_____

3)_____

KITE:

G

A

H   F

J

Example 1:

In kite ABCD, $m\angle BCD = 98°$ and $m\angle ADE = 47°$. Find each measure.

$m\angle DAE =$ _____

$m\angle BCE =$ _____

$m\angle ABC =$ _____

B

C

E

A

D