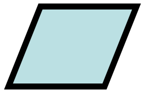
5.1

Quadrilaterals

Quadrilateral:______________________________________

Parallelogram:  ____________________________________

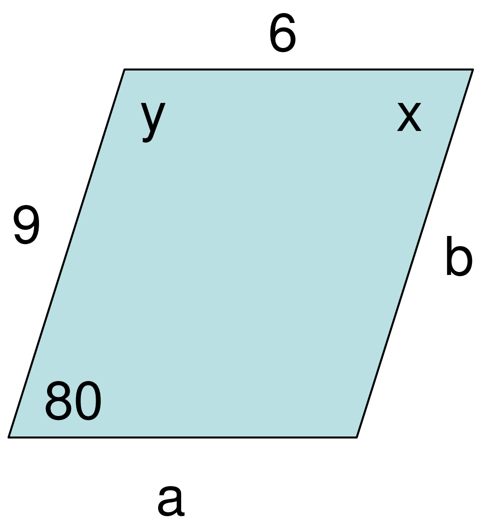
More Parallelogram Characteristics

Theorem 5.1:________________________________

Theorem 5.2:_______________________________

Theorem 5.3:_______________________________

Examples

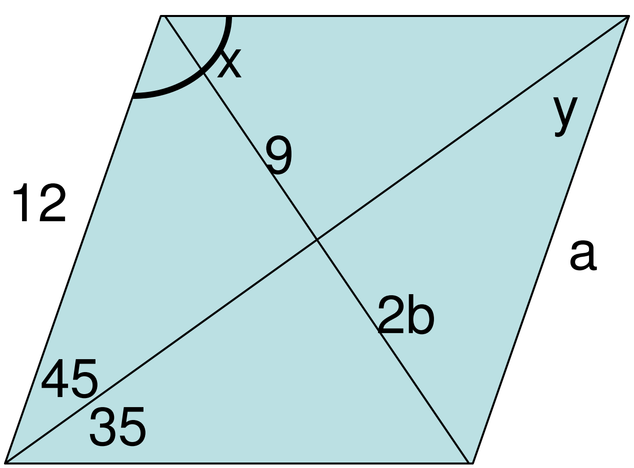


$a =$ ________

$b =$ ________

$x =$ ________

$y =$ ________



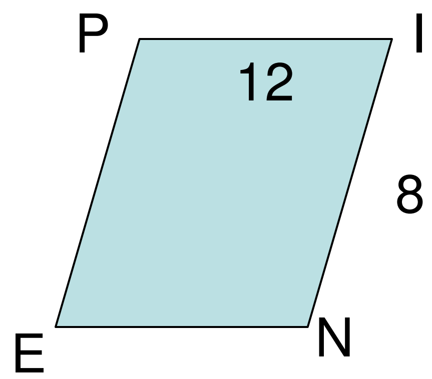
$a =$ ________

$b =$ ________

$x =$ ________

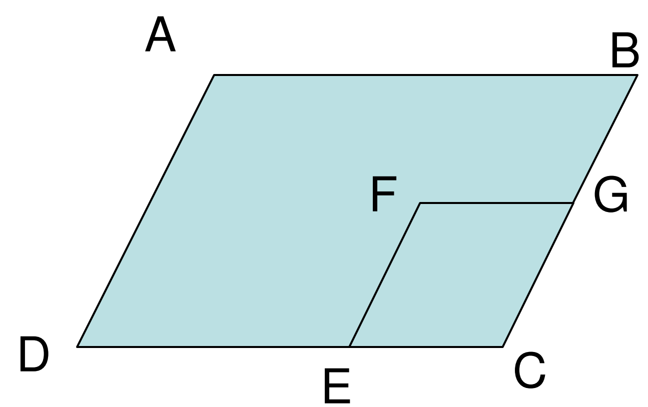
$y =$ ________

3. Find the perimeter of parallelogram PINE if PI=12 and IN=8.



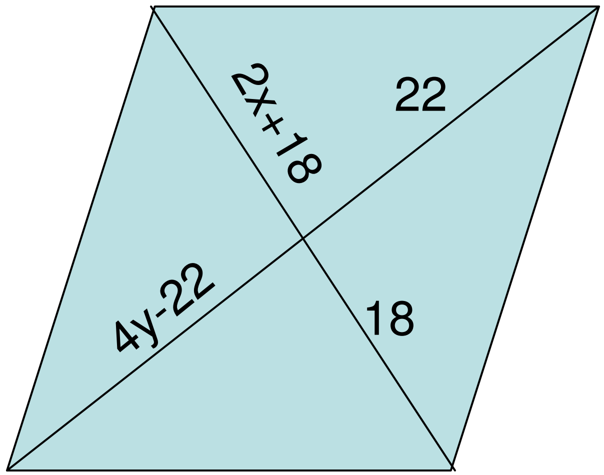
4. *Given* : ▱ABCD and ▱CEFG

Prove: $\measuredangle A \cong \measuredangle F$



	1. *Given*
	2. Opp $\measuredangle$'s $\cong$
	3. Transitive

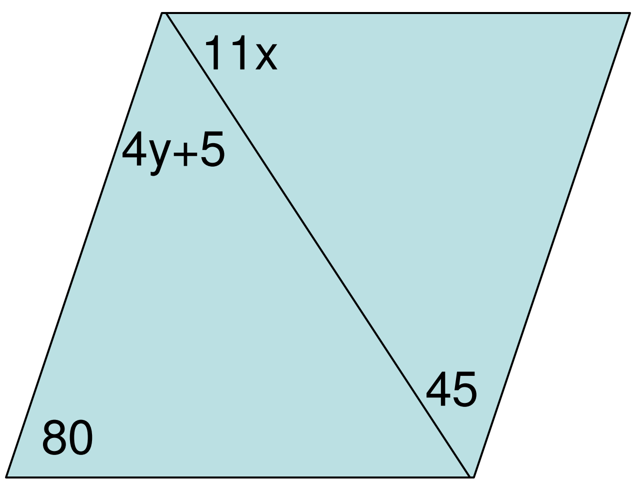
6.



X=_________

y=_________

7.



Which to solve 1st?

X=_________

y=_________

True or False:

1. Every parallelogram is a quadrilateral?
2. Every Quad is a parallelogram?
3. All angles of a parallelogram are congruent?
4. All sides of a parallelogram are congruent?
5. In ▱ RSTU, RS is parallel to TU?
6. In ▱ XWYZ, XY=WZ ?
7. In ▱ ABCD, if angle A=50, then C=130?

5.2

Proving Parallelograms

Ways to Prove Quadrilaterals are Parallelograms

Theorem 5.4: ________________________________

____

Theorem 5.5: ________________________________

____

Theorem 5.6: ________________________________

____

Theorem 5.7: ______________________________

____

5 ways to prove a quad is a Parallelogram

1.

2.

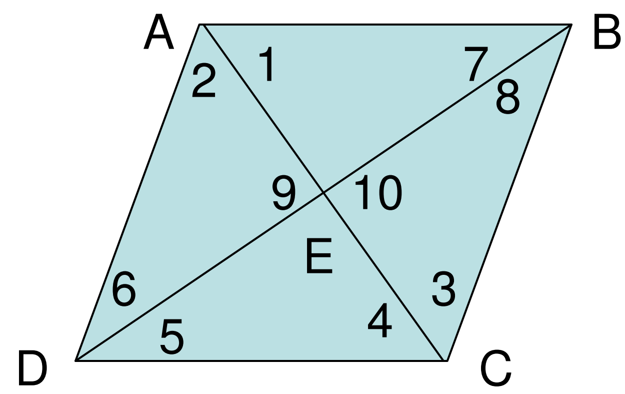
3.

4.

5.

$Given: \overline{AD} \parallel \overline{BC};$ BE=DE

Prove: $ABCD$ is a ▱



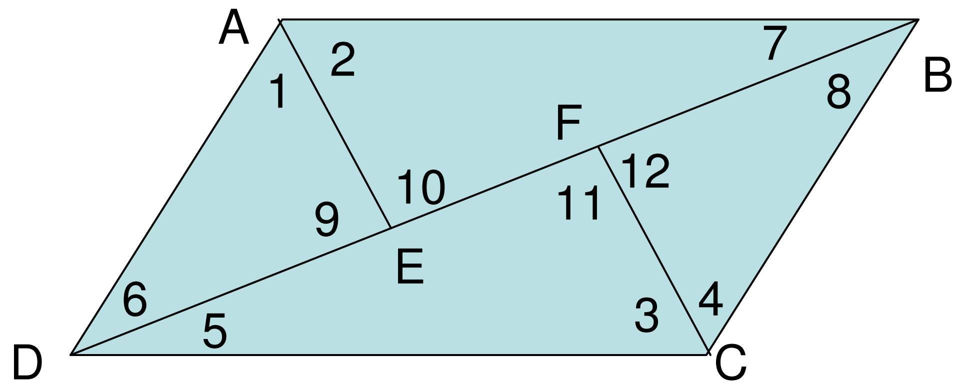
1.	1. *Given*

$Given: \square ABCD;$

$\overrightarrow{CF}$ bisects $\measuredangle BCD$

$\overrightarrow{AE}$ bisects $\measuredangle BAD$

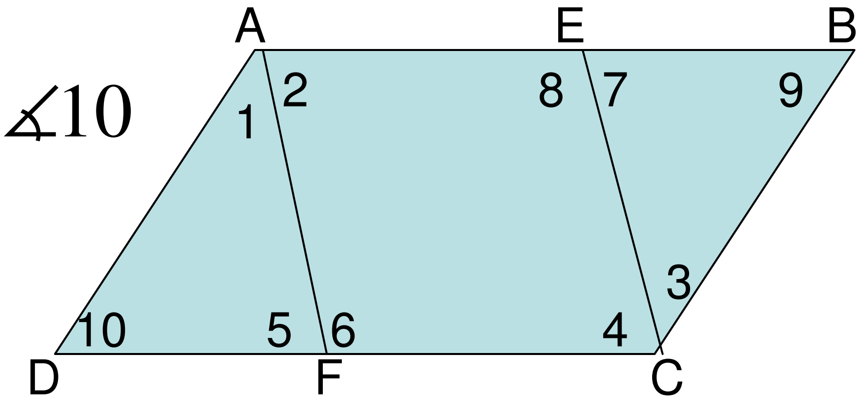
$Prove: \overline{AE} \cong \overline{CF}$



1.	1. *Given*

$Given: \square AECF;\ \measuredangle 9 \cong \measuredangle 10$

$\text{Prove}: ABCD$ is a $\square$



1. Here are the Reasons	1. *Given*

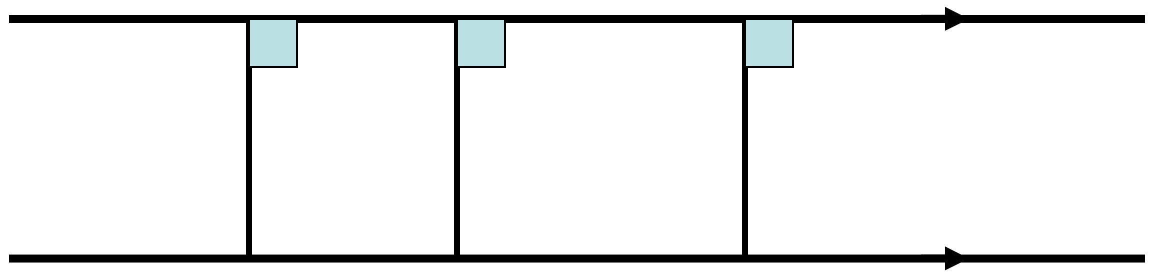
5.3

Parallel Lines

Theorems involving Parallel Lines

Theorem 5.8: ______________________________

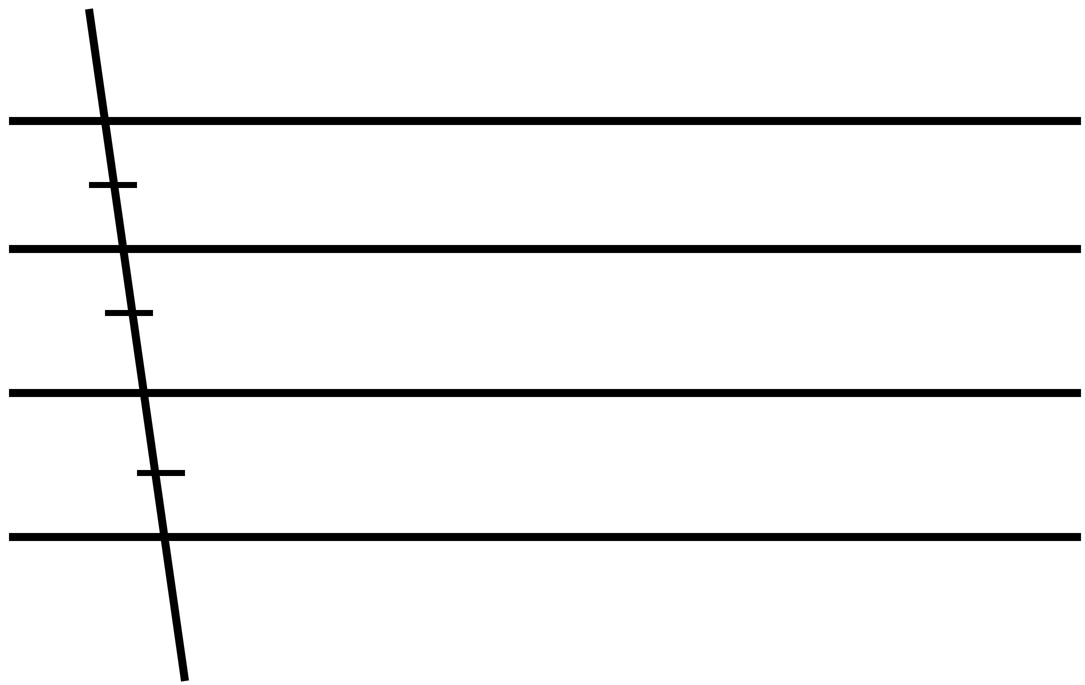
____



Theorem 5.9: ______________________________

____

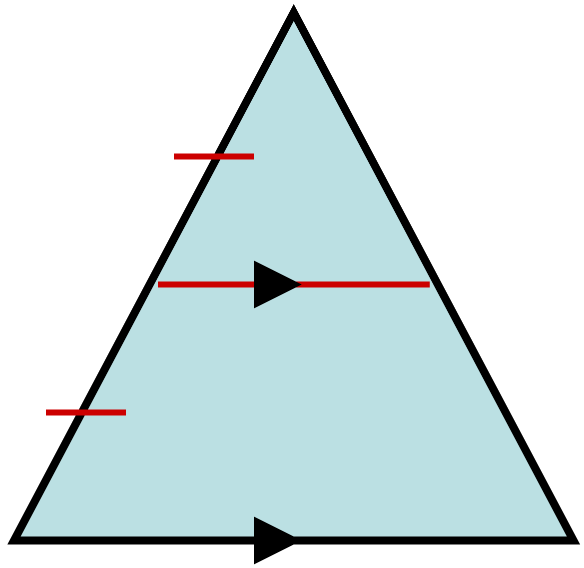
____



Theorem 5.10: ______________________________

____

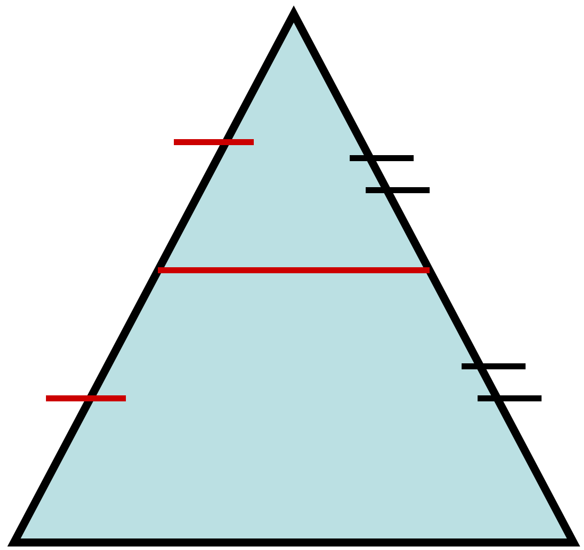
____



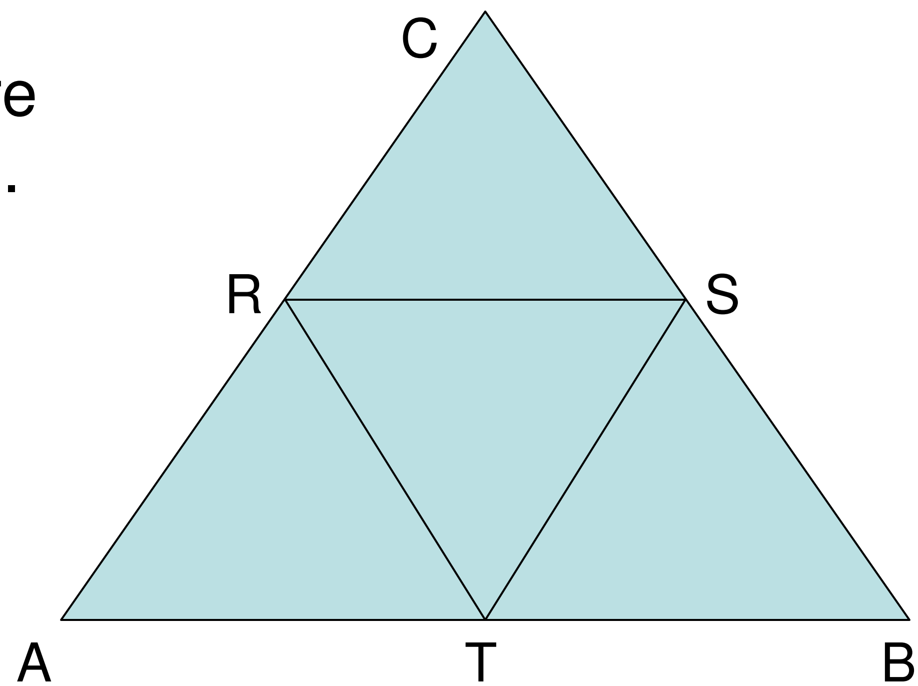
Theorem 5.11: ______________________________

____

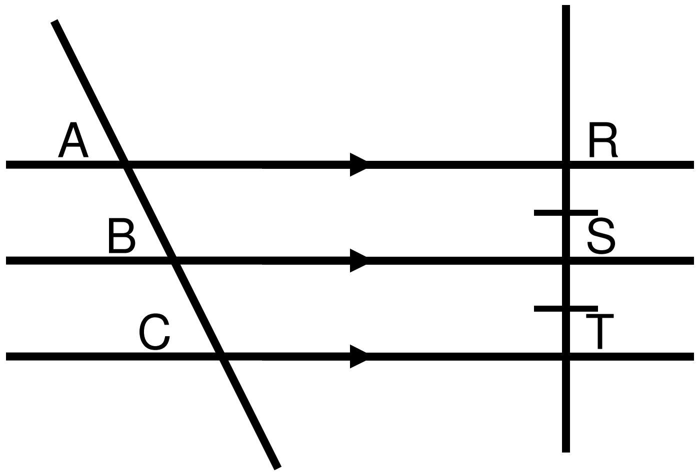
____



R, S, T are Midpoints.

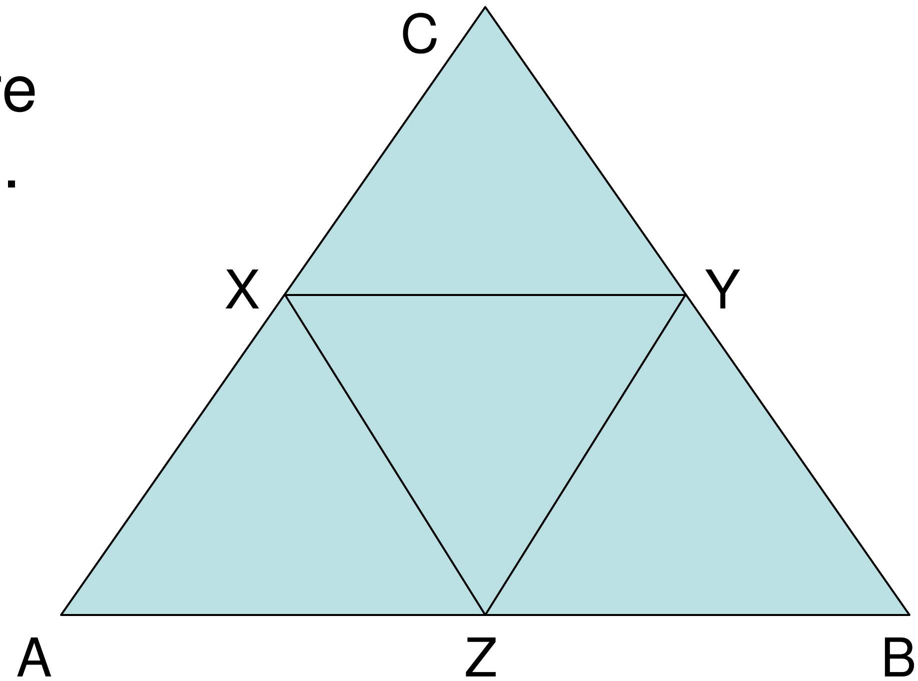


	AB	BC	AC	ST	TR	RS
a)	12	14	18			
b)		15	22			10
c)				5	9	6



1. If RS=12 then ST=________
2. If AB=8 then BC=_________
3. If AC=20 then AB=________
4. If AC=10x then BC=_______

R, S, T are Midpoints.



	AB	BC	AC	XY	XZ	ZY
a)	K		24		2k+3	
b)	9	8	6			

5.4

Special Parallelograms

Special Parallelograms

Rectangle:________________________________

Rhombus:________________________________

Square: ________________________________

Theorems for Special Parallelograms

Theorem 5.12: ___________________________

____

Theorem 5.13:____________________________

____

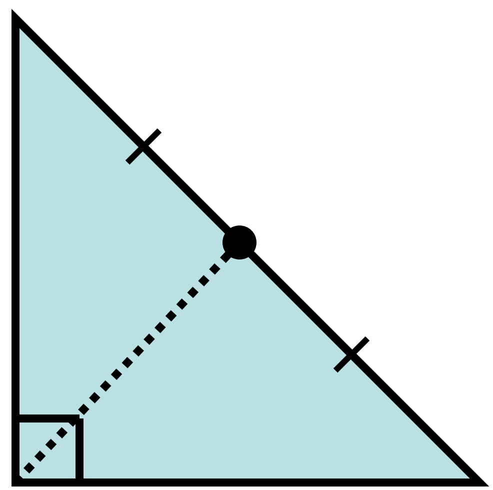
Theorem 5.14: ____________________________

____

Theorem 5.15: ____________________________________

____

____



Proving a Rhombus or Rectangle

Theorem 5.16: ______________________________

____

____

Theorem 5.17: ______________________________

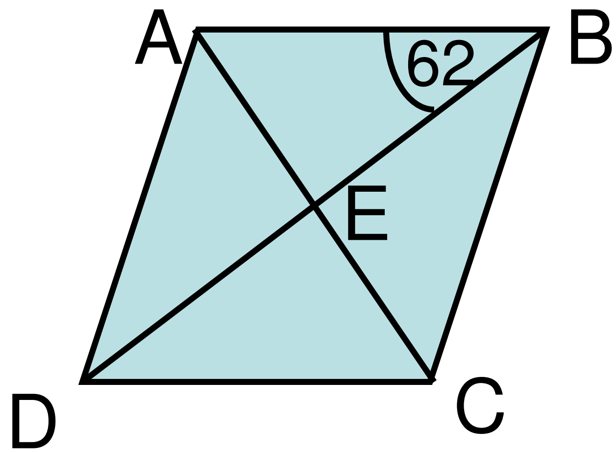
____

____

Property	Parallelogram	Rect.	Rhombus	Square
Opp sides ≅				
Opp sides ||				
Opp ∡'s ≅				
Diag form ≅△				
Diag bisect				
Diag ≅				
Diag ⊥				
Diag bisect 2∡'s				
All Rt ∡'s				
All sides ≅				

Examples:

ABCD is a Rhombus

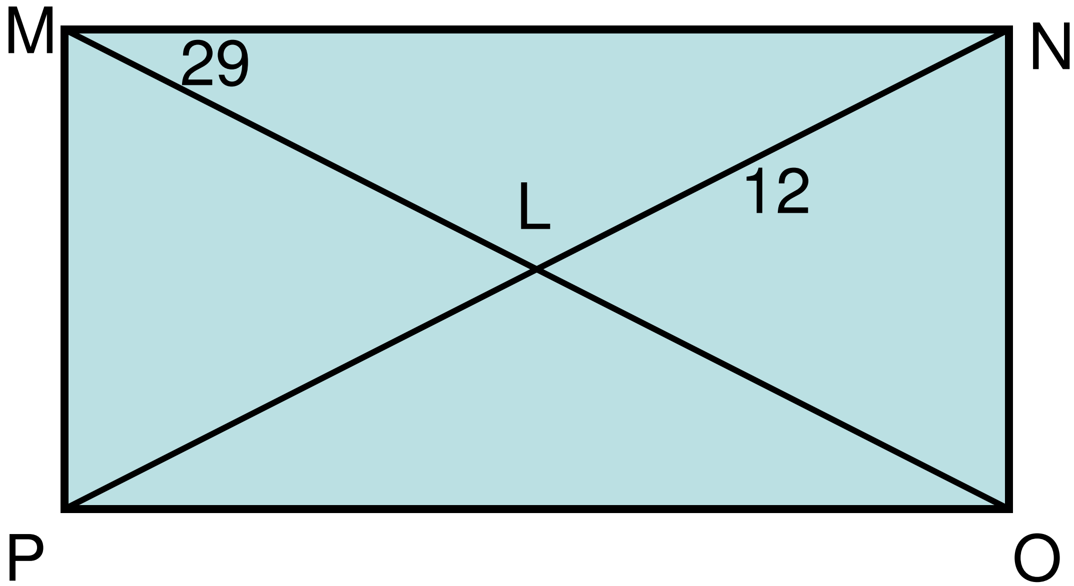


$\measuredangle ACD =$ ________

$\measuredangle DEC =$ ________

$\measuredangle EDC =$ ________

$\measuredangle ABC =$ ________



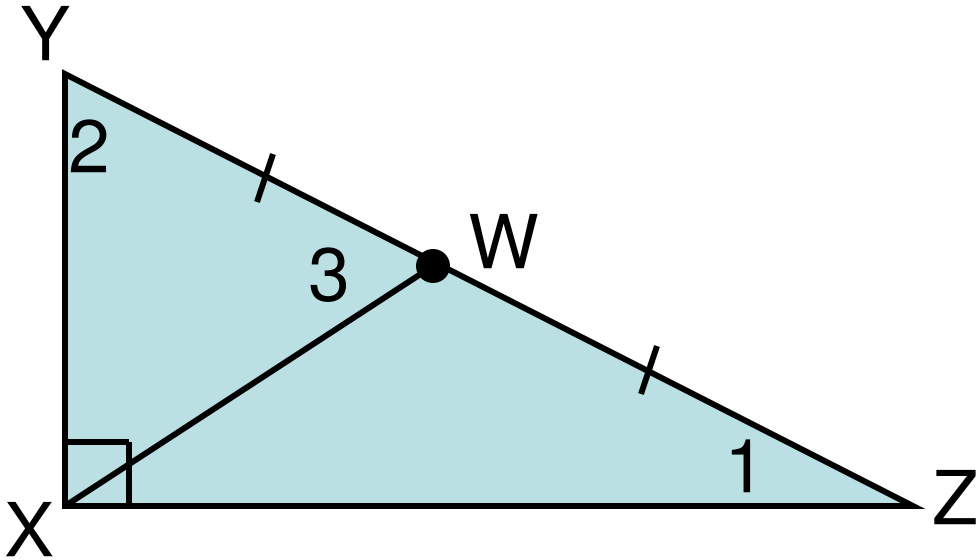
MNOP is a Rectangle

$\measuredangle PON =$ _________

$\measuredangle PMO =$ _________

$\overline{PL} =$ _____________

$\overline{MO} =$ ____________



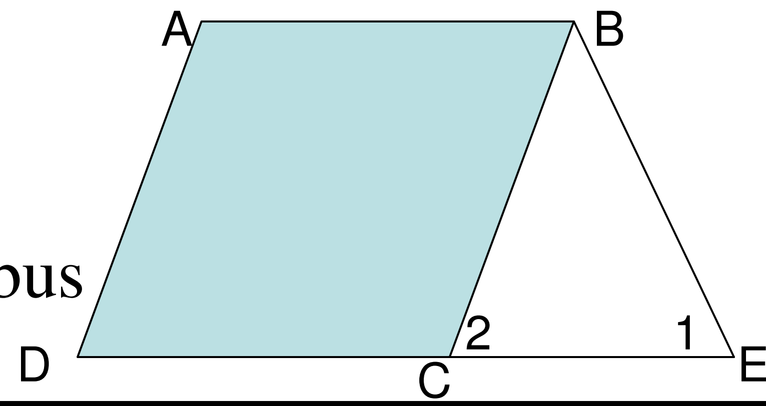
$\measuredangle 2 \cong \measuredangle 3$; Find $\measuredangle 1$=_______

YW=3x-2 ; WZ=x+8; Find YZ=______

$Given: \square ABCD$; BE=CD

$\measuredangle 1 \cong \measuredangle 2$

Prove: $ABCD$ is a Rhombus



1.	1. *Given*

5.5

Trapezoids

Warmup: Always, Never or Sometimes

1. A square is_________ a rhombus.
2. The diagonals of a parallelogram __________ bisect the angles of a parallelogram.
3. The diagonals of a rhombus are __________ congruent.
4. A rectangle __________ has consecutive sides congruent.
5. The diagonals of a parallelogram are __________ perpendicular bisectors of each other

Trapezoids

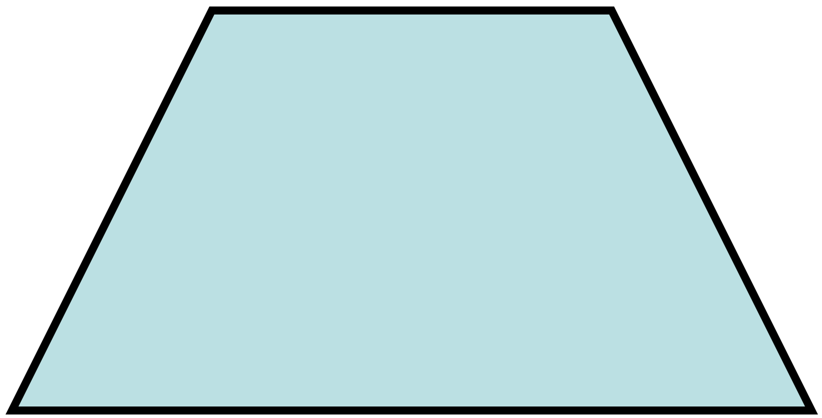
Trapezoid: ______________________________

____

- ______________________________
- ______________________________

Isosceles Trapezoid ____________________________

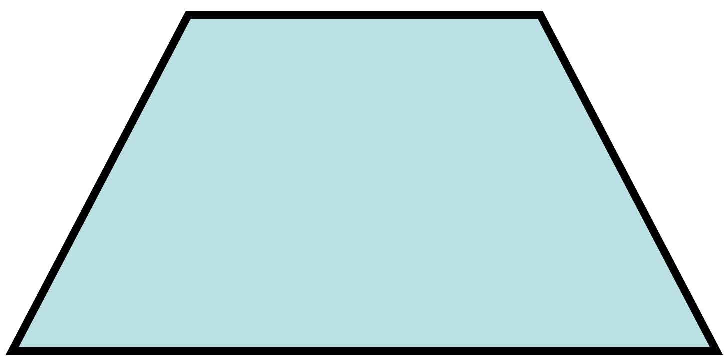
____



Trapezoid Theorems

Theorem 5.18:_______________________________

____

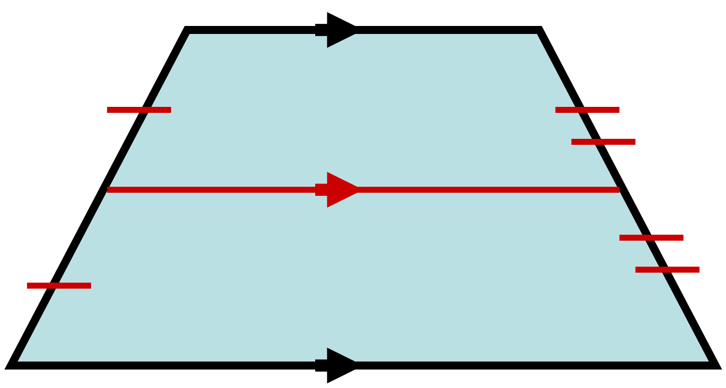


Theorem 5.19: ________________________________

____

____

____

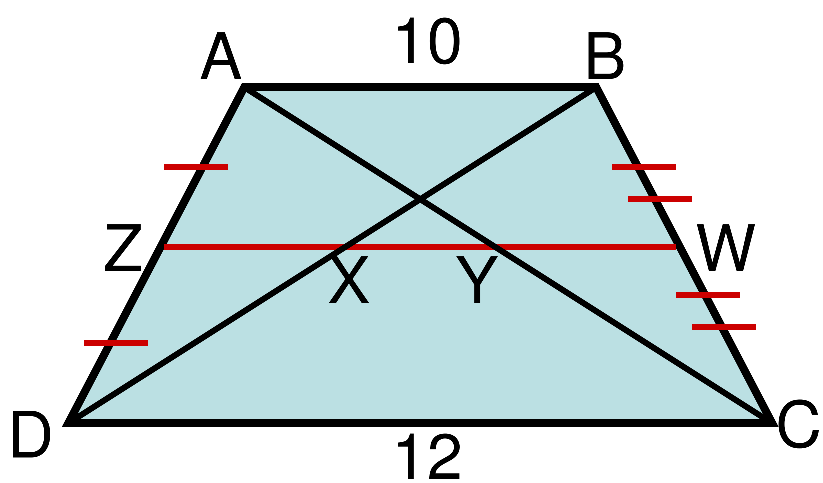


Solve: AB=10; DC=12

Find YW=______

ZX=______

XY=______

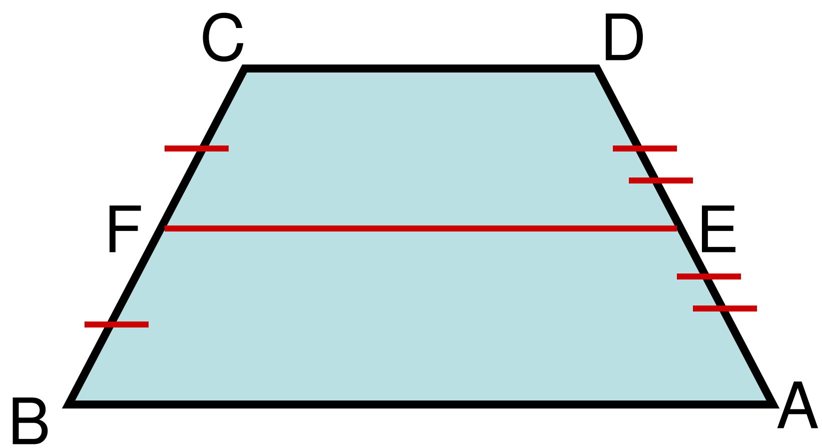


1. If AB=25, DC=13 then EF=________

2. If AE=11, FB=8 then AD=_______ BC=_______

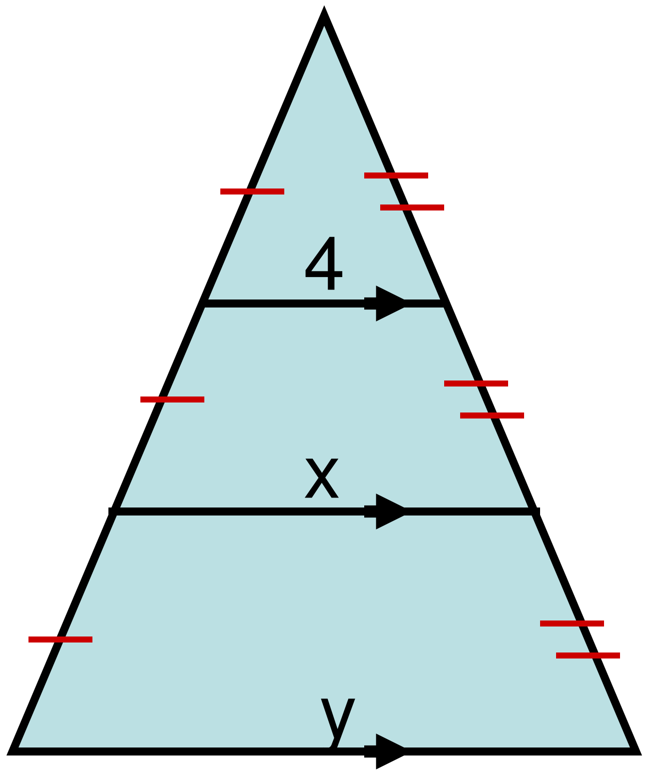
3. If AB=29 and EF=24 then DC=______

4. If AB=7y+6, EF=5y-3, and DC=y-5 then y=__



Find x=__________

y=__________



Quad TUNE is an isosiceles trapezoid with TU and NE as bases. If angle U equals 62 degrees find the measures of the other 3 angles.

$\measuredangle E =$ _______

$\measuredangle T =$ _______

$\measuredangle N =$ _______