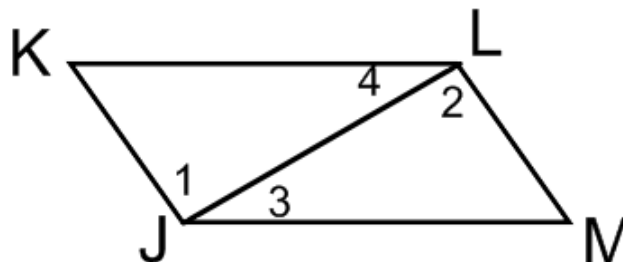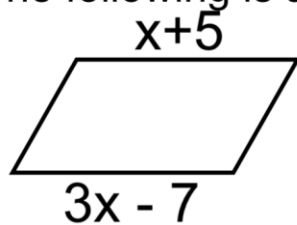# PARALLELOGRAM PROPERTIES

1.

2.

3.

4.

5.

Given: JKLM is a parallelogram

Prove: $\overline{JK} \cong \overline{LM}$, $\overline{KL} \cong \overline{MJ}$

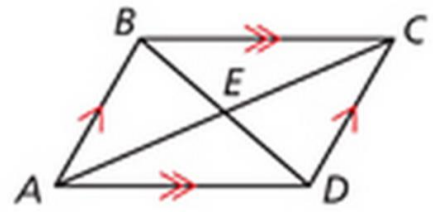<u>Opposite Sides are Congruent</u>
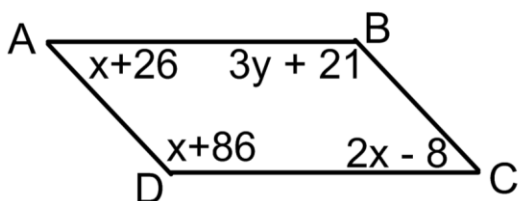
The following is a parallelogram, what is the value of x?

x+5

3x - 7

Given: *ABCD* is a parallelogram.

Prove: $\angle BAD \cong \angle DCB$, $\angle ABC \cong \angle CDA$

Proof:

Opposite Angles are Congruent

ABCD is a parallelogram find the value of x and y.
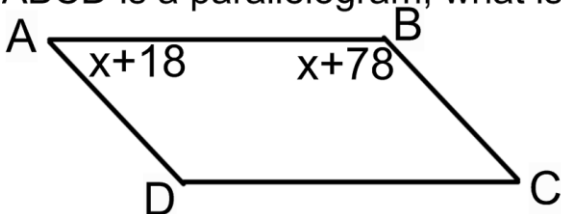
Prove consecutive angles are supplementary

Given that ABCD is a parallelogram.

Prove: ∠A and ∠B are supplementary.
∠B and ∠C are supplementary.
∠C and ∠D are supplementary.
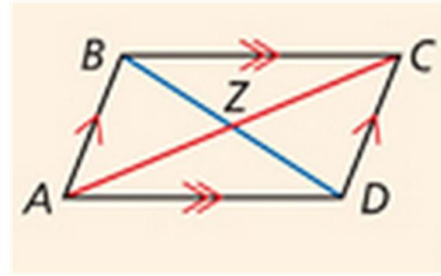∠D and ∠A are supplementary.

Consecutive Angles are Supplementary

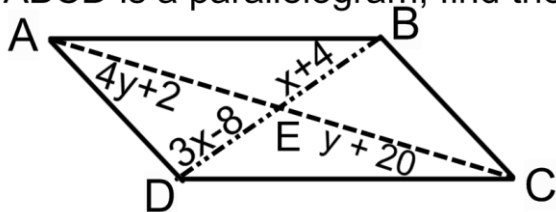ABCD is a parallelogram, what is the measure of angle B?

$x+18$

$x+78$

Given ABCD is a parallelogram,
Prove diagonals bisect each other

Diagonals Bisect Each Other
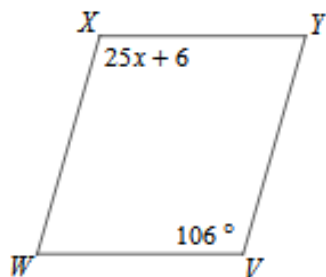
ABCD is a parallelogram, find the value of x and y.

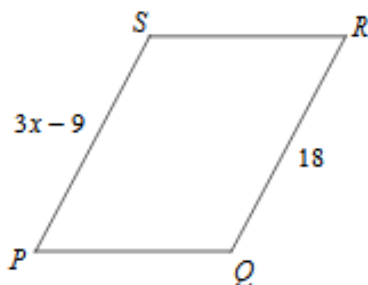**Fill in the blanks to complete each definition or theorem.**

1. If a quadrilateral is a parallelogram, then its consecutive angles are

   _____.

2. If a quadrilateral is a parallelogram, then its opposite sides are _____.

3. A parallelogram is a quadrilateral with two pairs of _____ sides.

4. If a quadrilateral is a parallelogram, then its diagonals _____ each other.

5. If a quadrilateral is a parallelogram, then its opposite angles are _____.

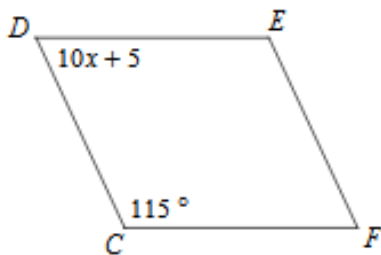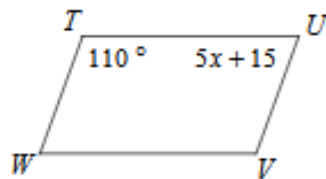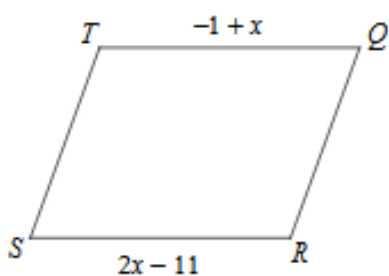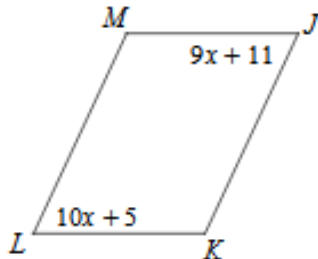**Find the value of x that would ensure the following figures are parallelograms.**

1)

X Y
$25x + 6$

$106°$
W V

2)

S R

$3x - 9$

18

P Q

3)

D E
$10x + 5$

$115°$
C F

4)

T U
$110°$ $5x + 15$

W V

5)

T $-1 + x$ Q

S $2x - 11$ R

6)

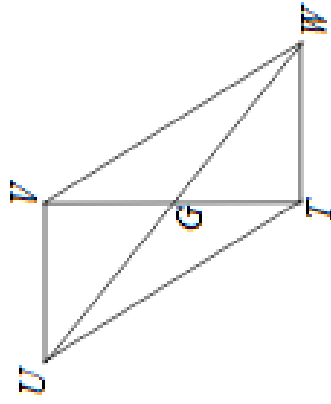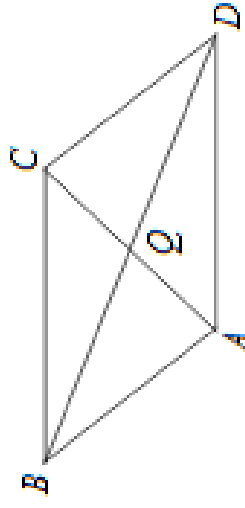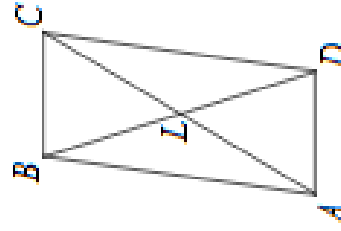M J
   $9x + 11$

$10x + 5$
L K

7) $UG = 12$
$GW = x + 1$

8) $BQ = 20$
$QD = 4 + 4x$

9) $BD = 26$
$LD = x + 3$

10) $HW = 19$
$UW = 4x - 2$