

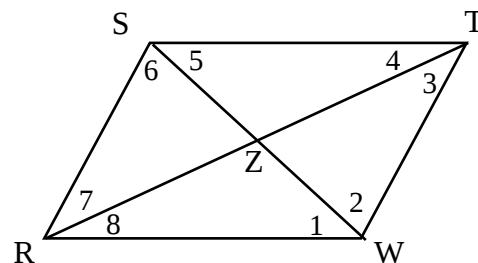
10.1 - 10.2 Parallelograms
Pre-AP Geometry Homework

Name _____
Period _____ Date _____

Figures are not drawn to scale. Show all your work to receive full credit

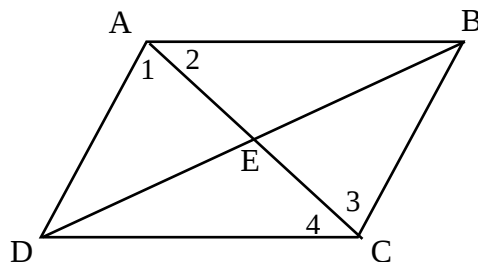
RSTW is a parallelogram. Use the properties of parallelograms to complete each statement.

1. $\overline{RW} \parallel$ _____
2. $\angle RST \cong \angle$ _____
3. $\overline{SZ} \cong$ _____
4. $\angle 6 \cong \angle$ _____
5. $\angle STW$ is supplementary to $\angle$ _____
6. The perimeter of parallelogram RSTW is 48cm.
If RS is 5cm less than RW, find the lengths of ST and TW



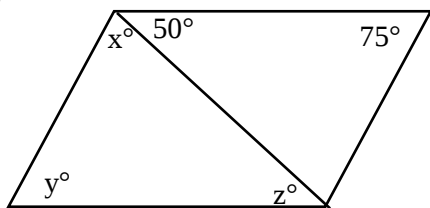
ABCD is a parallelogram. Use the properties of parallelograms to find the indicated length, angle measure, or value of x.

7. If $m\angle ADC = 83^\circ$, then $m\angle DAB =$ _____
8. If $AD = 23$, then $CB =$ _____
9. If $m\angle 3 = 65^\circ$ and $m\angle 4 = 48^\circ$, then $m\angle 2 =$ _____
10. If $AE = 8x + 7$ and $CE = 11x - 8$, then $x =$ _____
11. If $DC = 17 - 4x$ and $AB = 3x - 11$, then $x =$ _____
12. If $ED = 3x + 6$ and $DB = 48$, then $x =$ _____
13. If $m\angle DAB + m\angle BCD = 214^\circ$ and $m\angle ABC = x$, then $x =$ _____

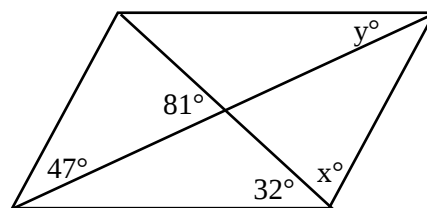


Find the values of the variables in each parallelogram.

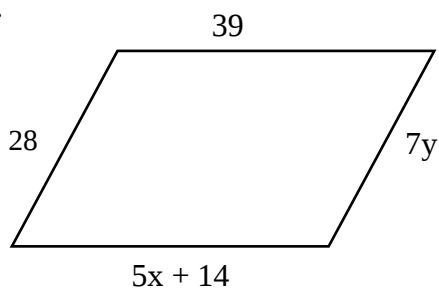
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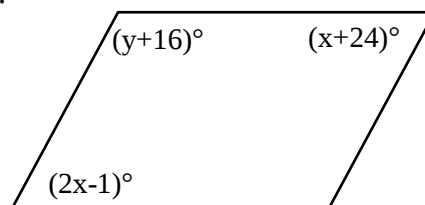
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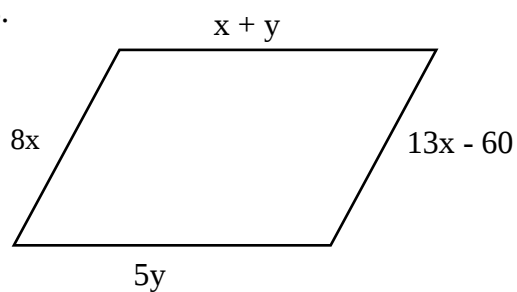
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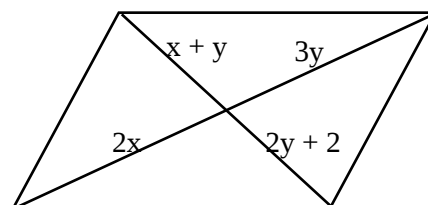
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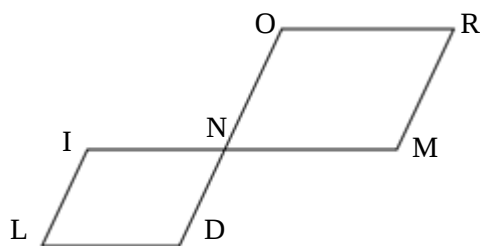
19.



TRY THIS OUT...

20. Given: $\square$ LIND and $\square$ NORM

Prove: $\angle L \cong \angle R$



For 21-29, determine if the statement is true or false.

- ____ 21. All quadrilaterals are parallelograms.
- ____ 22. All parallelograms are quadrilaterals.
- ____ 23. A square is a parallelogram.
- ____ 24. A parallelogram with a right angle is a square.
- ____ 25. All rectangles are parallelograms.
- ____ 26. All rhombuses are squares.
- ____ 27. All squares are rectangles.
- ____ 28. A parallelogram with four congruent sides is a square.
- ____ 29. A parallelogram with perpendicular diagonals is a square.

For #30-37, draw and label a picture for each problem. Solve and show all work.

30. RSTW is a rectangle. The diagonals intersect at Z. If $RZ = 2x + 5$, and $SW = 5x - 20$, find x and ZW .

31. EFGH is a rectangle. If $m\angle HEG = (2x + 5)^\circ$, and $m\angle EFH = (7x - 5)^\circ$, find x and $m\angle FHG$.

32. WXYZ is a rhombus with diagonals meeting at M. If $WM = 3x + 7$ and $YM = 5x - 3$, find WY .

33. ABCD is a rhombus. $AB = y^2$ and $BC = y + 30$. Find CD.

34. ABCD is a rhombus. If $m\angle ABC = (4x + 45)^\circ$, and $m\angle ADC = (x^2)^\circ$, find $m\angle ABC$ and $m\angle BDC$.

35. ABCD is a rhombus. The diagonals intersect at E. If $m\angle DEC = (x + 72)^\circ$, $m\angle ADB = (3y)^\circ$, and $m\angle DCB = 72^\circ$, find x , y , $m\angle ADB$ and $m\angle ABC$.

36. MNOP is a rhombus. If $m\angle OMP = (3x + 2)^\circ$, and $m\angle NOP = (4x + 40)^\circ$, find $m\angle MPO$ and $m\angle NMO$.

37. GHIJ is a rhombus. The diagonals intersect at K. If $GK = 7$, and $HK = 24$, find HI.