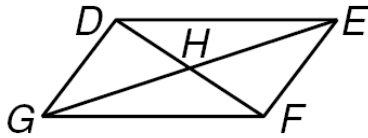
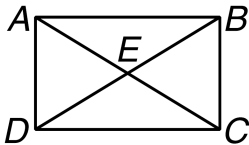


1. In parallelogram  $DEFG$ ,  $m\angle FGE = 4x + 1$  and  $m\angle DEG = 6x - 15$ . Find  $m\angle FGE$ .



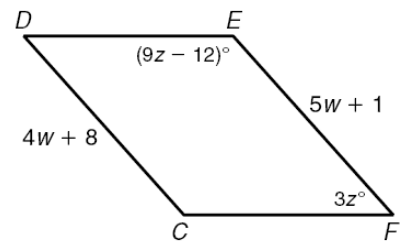
2.  $ABCD$  is a rectangle. If  $m\angle DAC = 7x + 1$  and  $m\angle BAC = 9x - 7$ , find  $m\angle DCA$ .



3.  $CDEF$  is a parallelogram. Find each indicated value.

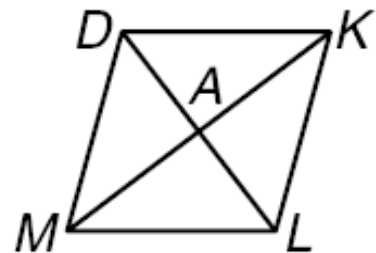
$CD =$  \_\_\_\_\_       $m\angle F =$  \_\_\_\_\_

$EF =$  \_\_\_\_\_       $m\angle C =$  \_\_\_\_\_



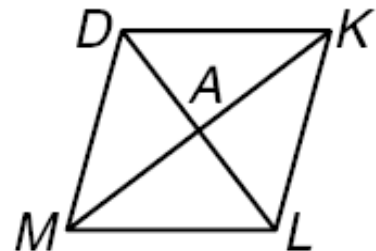
4. In rhombus  $DKLM$ ,  $m\angle MDA = 52^\circ$ .

- |                          |                          |
|--------------------------|--------------------------|
| a. $m\angle DKA =$ _____ | e. $m\angle DKL =$ _____ |
| b. $m\angle LAK =$ _____ | f. $m\angle MAD =$ _____ |
| c. $m\angle LMA =$ _____ | g. $m\angle MLK =$ _____ |
| d. $m\angle KLA =$ _____ | h. $m\angle DMA =$ _____ |



5. In rhombus  $DKLM$ ,  $ML = 40$  and  $MK = 64$ .

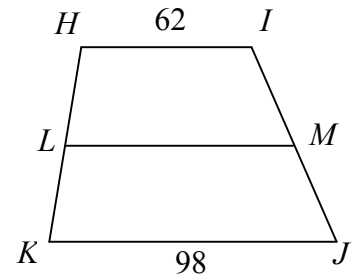
- |                 |                 |
|-----------------|-----------------|
| a. $AM =$ _____ | e. $MD =$ _____ |
| b. $KL =$ _____ | f. $KA =$ _____ |
| c. $DL =$ _____ | g. $DK =$ _____ |
| d. $AD =$ _____ |                 |



6. In trapezoid  $HIJK$ ,  $L$  and  $M$  are midpoints of the legs. Let  $\overline{NP}$  be the median of  $LMJK$ .

a. Draw and label  $\overline{NP}$  on the figure.

b. Find  $NP$ .



**For #7-11, write TRUE or FALSE.**

7. The diagonals of a rhombus are always perpendicular. \_\_\_\_\_
8. Every parallelogram is a rhombus. \_\_\_\_\_
9. The diagonals of a rectangle are always congruent. \_\_\_\_\_
10. If a quadrilateral is both a rhombus and a rectangle, then it is a square. \_\_\_\_\_
11. A rhombus is a quadrilateral with exactly one pair of parallel sides. \_\_\_\_\_

**For #12-15, pick the correct word (always, sometimes or never) to complete the statement.**

12. Squares are (sometimes, always, never) rectangles.
13. Parallelograms are (sometimes, always, never) rectangles.
14. Rhombi are (sometimes, always, never) parallelograms.
15. The diagonals of a kite are (sometimes, always, never) perpendicular.

16. Complete each statement about parallelogram  $LMNP$ . Justify your answer.

Statement

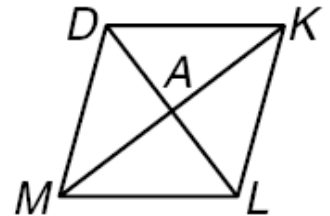
Justification

a.  $\overline{DM} \parallel$  \_\_\_\_\_ a. \_\_\_\_\_

b.  $\angle DKL \cong$  \_\_\_\_\_ b. \_\_\_\_\_

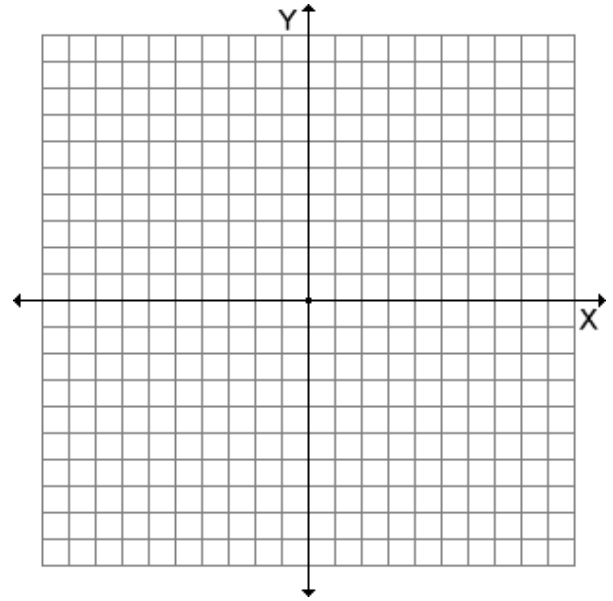
c.  $\overline{DK} \cong$  \_\_\_\_\_ c. \_\_\_\_\_

d.  $\overline{AL} \cong$  \_\_\_\_\_ d. \_\_\_\_\_



For #17, determine whether the quadrilateral with the given vertices is a parallelogram, rectangle, rhombus, or square. List all that apply and justify your answer. **Show all calculations.**

17.  $B(0, 3), E(6, -2), F(1, -8), G(-5, -3)$



18. Construct a rectangle in the space below.

19. Construct a rhombus in the space below.