

Fill in the blank, a sketch may help.

- In $\square ABCD$, if $AB = 12$ and $BC = 7$, then $CD =$ _____.
- In $\square QRST$, if $m\angle Q = 130^\circ$, then $m\angle S =$ _____ and $m\angle T =$ _____.
- In $\square ABCD$, if AC intersects BD at Q , $AQ = 6$ and $DQ = 10$, then $DB =$ _____.
- A rhombus with four right angles is a _____.
- In rhombus $MNOP$, if MO and NP intersect at Q , then $m\angle MQN =$ _____.
- In what type of parallelogram are the diagonals both perpendicular and congruent? _____.

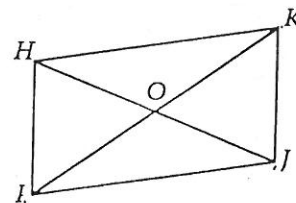
State whether each statement is *always*, *sometimes* or *never* true.

- A parallelogram with equal diagonals is a square.
- A trapezoid is a parallelogram
- The diagonals of a parallelogram are perpendicular.
- If the diagonals of a quadrilateral are congruent, then the quadrilateral is a rectangle.
- The legs of a trapezoid are congruent.
- A rhombus is a rectangle.

Use your information on parallelograms to solve each problem.

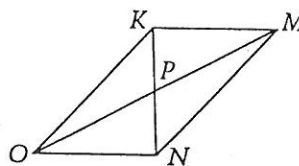
Set A Given $\square HIJK$

- If $HI = 18$, find KJ .
- If $HO = 10$, find HJ .
- If $m\angle HIJ = 135$, find $m\angle HKJ$.
- If the distance from K to \overleftrightarrow{HI} is 15, what is the distance from I to \overleftrightarrow{KJ} ?



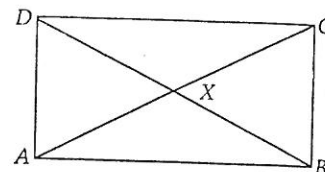
Set B Find x and y so that $KMNO$ is a parallelogram.

- $KM = x + y$; $MN = 2y + 6$; $ON = 2x - 7$; $KO = 3y$
- $KM = x + y$; $ON = 3x - 4y$; $m\angle MKN = x + 5$;
 $m\angle KNO = 2x - 10$
- $m\angle KOM = 6y + 1$; $m\angle KMO = 3x + 2$;
 $m\angle MON = 2x + 8$; $m\angle OMN = 4y + 7$



Set C In rectangle $ABCD$, with \overline{AC} and \overline{BD} intersecting at X ,

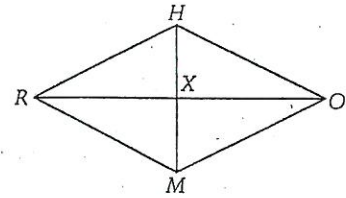
- if $BD = 7.5$ yards, then $XC =$?
- if $AX = 4y + 12$ and $CX = 2y + 48$, find y and AC .
- if $AC = 9p - 35$ and $BD = 4p + 70$, then $p =$?



Set D

In rhombus $RHOM$ with \overline{HM} and \overline{OR} intersecting at X ,

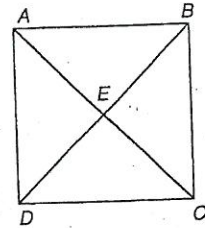
1. if $m\angle RHX = 62$, then $m\angle HOX = \underline{3}$ and $m\angle MRX = \underline{?}$.
2. find the perimeter if $HO = 7p - 15$ and $MO = 3p + 5$.
3. find $m\angle RMO$ and $m\angle MOH$ if $m\angle RMX = 6x + 5$ and $m\angle MOX = 4x + 10$.



Set E

Use square $ABCD$ and the given information to find each value.

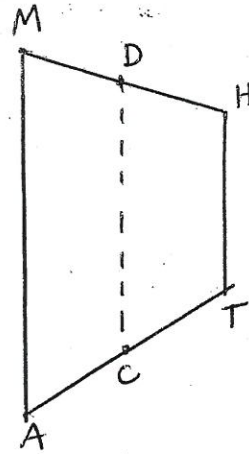
1. If $m\angle AEB = 3x$, find x .
2. If $m\angle BAC = 9x$, find x .
3. If $AB = 2x + 4$ and $CD = 3x - 5$, find BC .



Set F

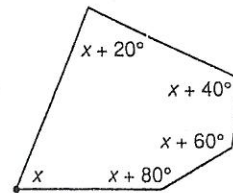
$MATH$ is an isosceles trapezoid with bases MA and TH . Use the given info to solve each problem.

1. If $MA = 34$ and $HT = \underline{11}$, find CD
2. If $HT = 17.6$ and $CD = \underline{40}$, find MA
3. If $CD = x + \underline{24}$ and $MA + HT = 4x + 3$, find x .
4. If $m\angle TAM = 63^\circ$, find $m\angle HTA$



Set G

1. Find the sum of the interior angles for a regular heptagon.
2. Find an interior angle for a regular 13-gon
3. Find an exterior angle for a regular 24-gon
4. What type of regular polygon has an interior angle measure of 135° ?
5. Solve for x . \rightarrow way over there \rightarrow



Set H

In Exercises 1-4, use the diagram of the kite $GHJI$, at the right, to decide whether the statement is true or false.

1. \overline{GI} and \overline{HJ} are perpendicular.
2. \overline{GI} and \overline{HJ} are congruent.
3. $\angle G$ and $\angle H$ are congruent.
4. $\angle G$ and $\angle I$ are congruent.

