

Geometry
Chapter 6 Review
Quadrilaterals

Name KEY Date _____
Hour _____

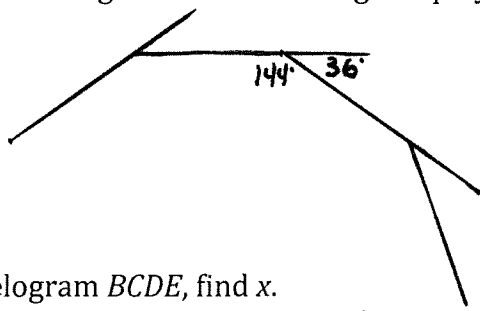
1) Find the sum of the measures of the interior angles of a convex 20-gon.

$$\begin{aligned} \text{interior tot.} &= (20 - 2) \cdot 180 \\ &= (18) \cdot 180 \\ &= 3240 \end{aligned}$$

2) Find the sum of the measures of the exterior angles of a convex 13-gon.

$$\text{exterior total always} = 360$$

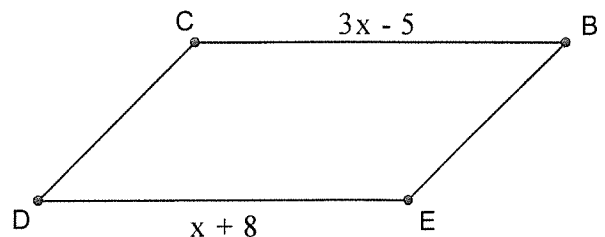
3) If each interior angle measure of a regular polygon is 144° , find each exterior angle measure.



4) For parallelogram $BCDE$, find x .

opposite sides of //ogram are \cong
so ...

$$\begin{aligned} 3x - 5 &= x + 8 \\ 2x - 5 &= 8 \\ 2x &= 13 \\ x &= 6.5 \end{aligned}$$

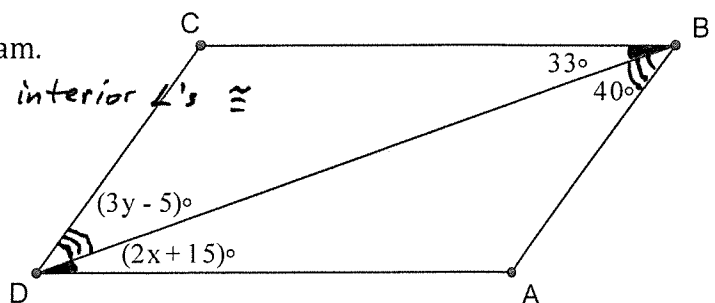


5) Name 5 properties of a parallelogram.

- opp sides \parallel
- consecutive \angle 's supplementary
- opposite \angle 's \cong
- opposite sides \cong
- diagonals bisect each other

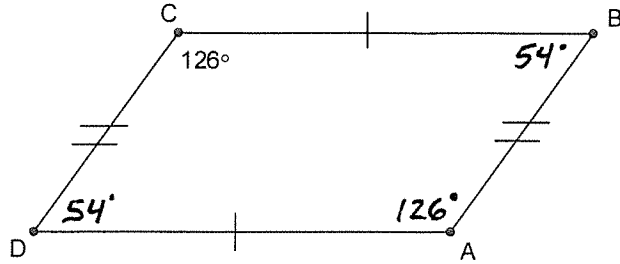
6) Find x and y so that $ABCD$ will be a parallelogram.

$$\begin{aligned} 3y - 5 &= 40 & 2x + 15 &= 33 \\ 3y &= 45 & 2x &= 18 \\ y &= 15 & x &= 9 \end{aligned}$$

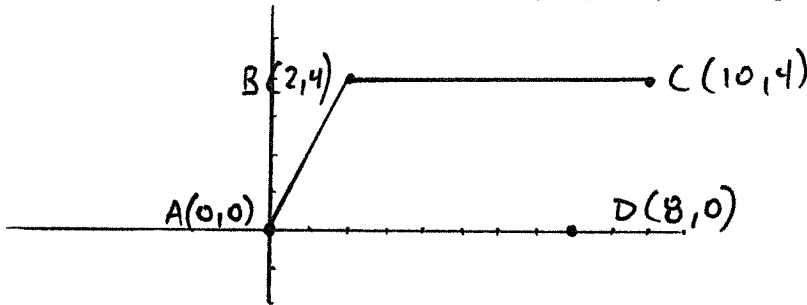


7) Find the missing angle measures.

opposite \angle 's
of \parallel ogram are \cong
consecutive \angle 's
are supp.



8) Parallelogram $ABCD$ has vertices $A(0, 0)$, $B(2, 4)$, $C(10, 4)$. Find a pair of coordinates for D .



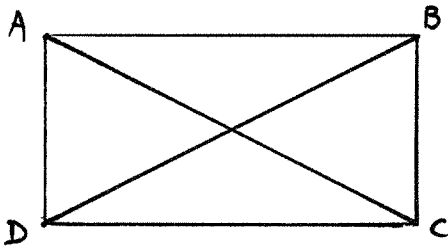
Move down and
back from C
to D just like
you move from
 B to A .

(... or the point could
be at $(12, 8)$ or $(-8, 0)$)

9) Name two properties rectangles have that rhombi don't necessarily have.

- 4 right \angle 's
- \cong diagonals

10) $ABCD$ is a rectangle with diagonals \overline{AC} and \overline{BD} . If $AC = 2x + 12$ and $BD = 46$, find x .



The diagonals of a rectangle are \cong , so...

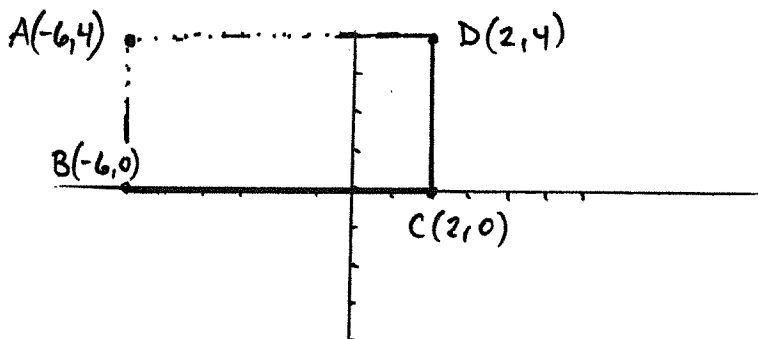
$$AC = BD$$

$$2x + 12 = 46$$

$$2x = 34$$

$$x = 17$$

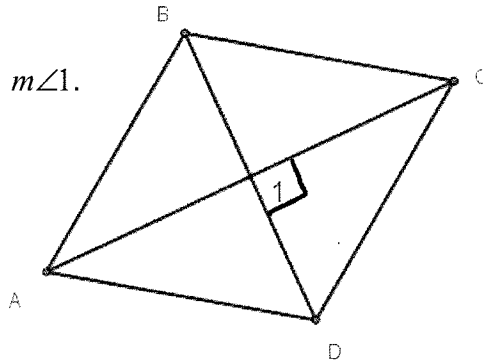
11) $ABCD$ is a rectangle with $B(-6, 0)$, $C(2, 0)$, and $D(2, 4)$. Find the coordinates of A .



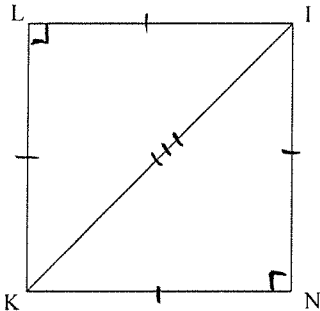
12) For rhombus $ABCD$, find $m\angle 1$.

The diagonals of a rhombus are \perp .

90°

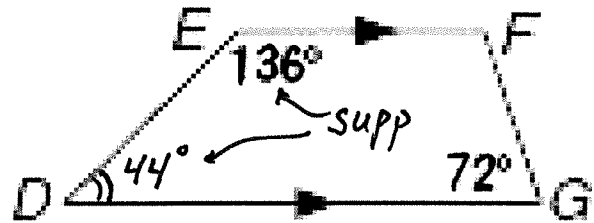


13) Find $m\angle KIN$ in this square.



Since each Δ is isosceles there will be 2 \cong sides, thus 2 \cong \angle 's. That forces $m\angle KIN$ to be 45° .

14) In trapezoid $DEFG$, find $m\angle D$.



15) The base of a statue at the park is the shape of a trapezoid. The lower edge is 56 inches and the upper edge is 40 inches. An engraved plaque will be centered on a face of the trapezoid surface. What is the width of the median?

Median length is the average of the base lengths.

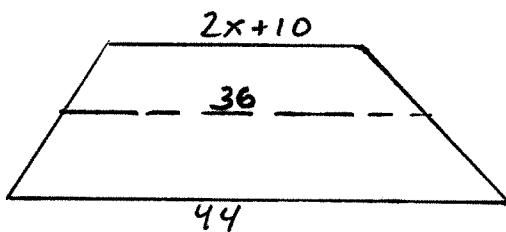
$$d = \frac{(40+56)}{2}$$

$$= \frac{96}{2}$$

$$= 48$$



16) The length of one trapezoid base is 44, the median is 36, and the other base is $2x + 10$. Find x .



$$36 = \frac{(2x+10)+44}{2}$$

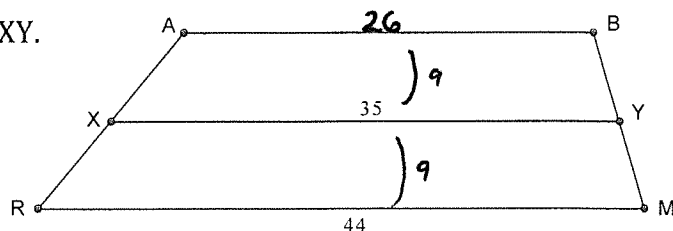
$$72 = (2x+10)+44$$

$$72 = 2x + 54$$

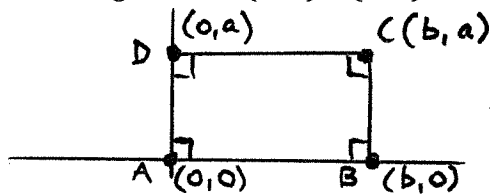
$$18 = 2x$$

$$9 = x$$

17) Find AB in this trapezoid with median XY .

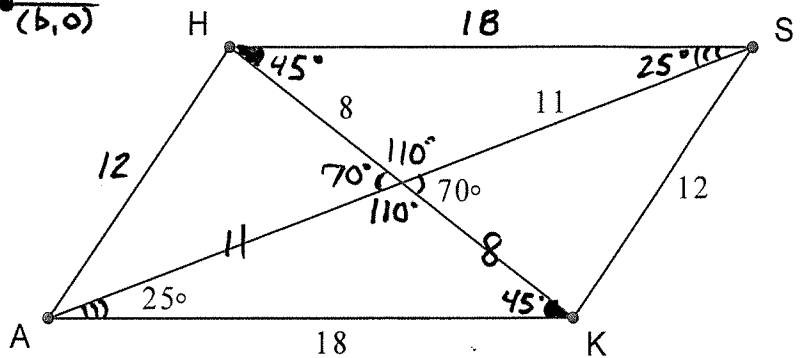


18) $ABCD$ is a rectangle with $A(0, 0)$, $B(b, 0)$, and $D(0, a)$. Find the coordinates of C .



19) Find all the missing information you can for this parallelogram.

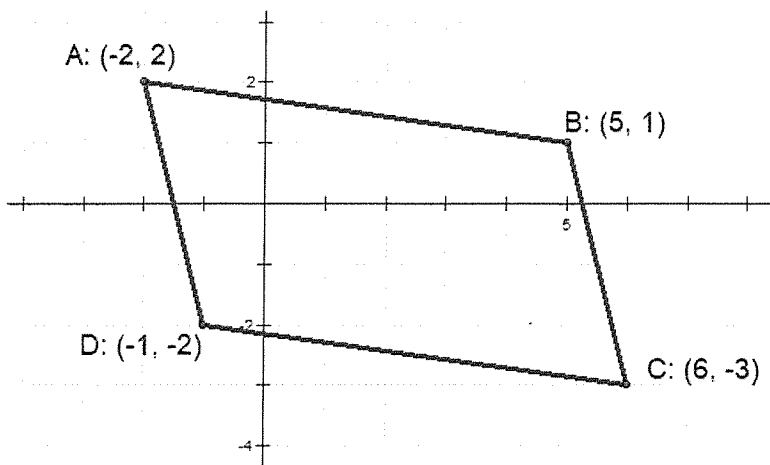
Some of the \angle measures can't be determined



20) Suppose you position a square in the coordinate plane and label its coordinates. How would you prove that the diagonals of the square bisect each other?

You would find the midpoint of each diagonal. Those two midpoints would be the same point if the diagonals bisected each other.

21) Show why this is a parallelogram. Include work that's easy to follow.



*Either show that the opposite sides have the same slopes
or show the opposite sides have the same lengths
or show the diagonals use the same midpt.*