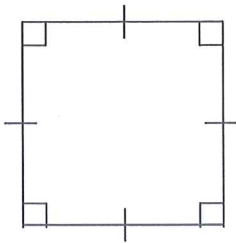


Square Homework

key

- Opposite sides of a parallelogram are \cong and parallel
- Opposite angles of a parallelogram are \cong
- Consecutive angles of a parallelogram are Suppl.
- The sum of the angles of a parallelogram are = 360°
- The diagonals of a parallelogram bisect each other
- Diagonals are perpendicular to each other
- Diagonals bisect the angles
- Diagonals are \cong

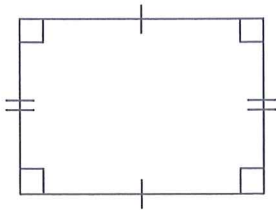
1.



Is this a square? Yes

Why or why not? Because it has all \cong sides and 4 Right angles

2.

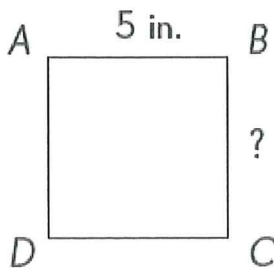


Is this a square? NO

Why or why not? It is not a square because it does not have 4 \cong sides it only has 4 Right \angle s which makes it a rectangle

ABCD is a SQUARE for each of the following.

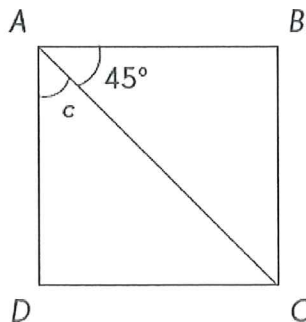
3. Find the missing side.



$BC = 5 \text{ in.}$

def. of square
all 4 \cong sides +
all 4 Right \angle s

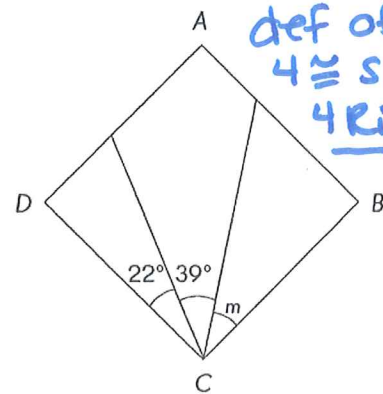
4. Find the measure of $\angle c$.



$\angle C = 45^\circ$

diagonals bisect
the angles

5. Find the measure of $\angle m$.



def of a square
4 \cong sides +
4 Right \angle s

$\angle M + 22 + 39 = 90^\circ$
 $\angle M + 61 = 90$
 $\angle M = 29^\circ$

6. MATH is a square.

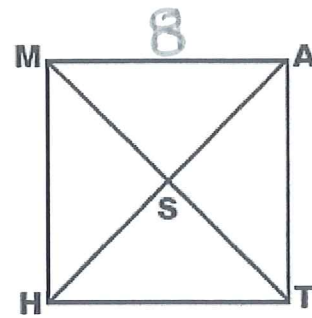
a) If $MA = 8$, then $AT = \underline{8}$ def of square

b) $m\angle HST = \underline{90^\circ}$ diags are \perp

c) $m\angle MAT = \underline{90^\circ}$ def of a square

d) If $HS = 2$, then $HA = \underline{2}$ and $MT = \underline{4}$ diags are \cong and bisect each other

e) $m\angle HMT = \underline{45^\circ}$ diags bisect the angles



7. Use square ABDC.

a. If $AB = 2x + 5$ and $BD = 5x - 20$, find x .

$AB \cong BD$ def of a square all 4 sides \cong and 4 right \angle s

$$2x + 5 = 5x - 20$$

$$5 = 3x - 20$$

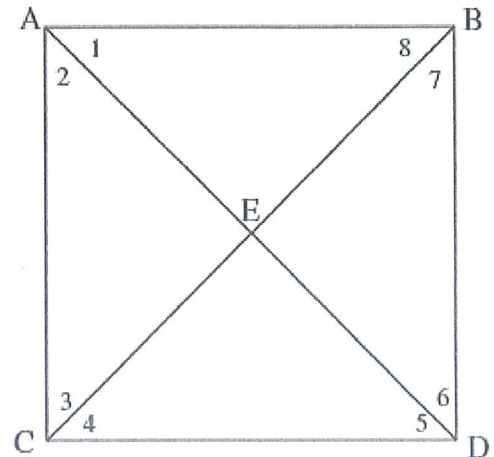
$$25 = 3x$$

$$\boxed{8.\bar{3} = x}$$

b. Find the measures of the numbered angles.

$$\begin{aligned} \angle 1 &= 45^\circ & \angle 5 &= 45^\circ \\ \angle 2 &= 45^\circ & \angle 6 &= 45^\circ \\ \angle 3 &= 45^\circ & \angle 7 &= 45^\circ \\ \angle 4 &= 45^\circ & \angle 8 &= 45^\circ \end{aligned}$$

Square



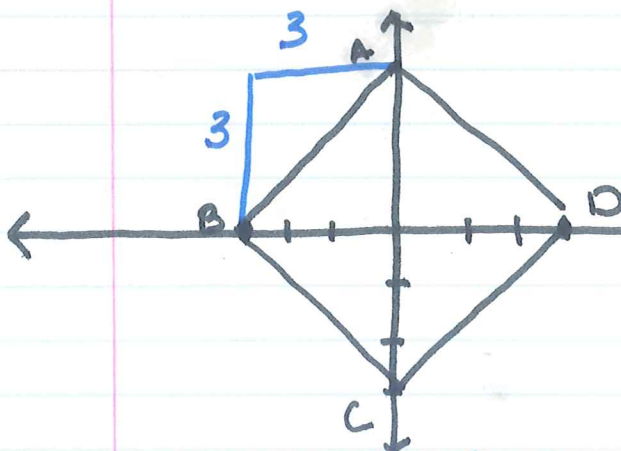
You must show all of your work on graph paper for the following.

8. Determine whether the figure with vertices $A(0,3)$, $B(-3,0)$, $C(0,-3)$, and $D(3,0)$ is a square.

9. Determine whether the figure with vertices $A(-4,0)$, $B(-3,3)$, $C(2,2)$, and $D(1,-1)$ is a square.

Squares HW

8. $A(0,3)$ $B(-3,0)$ $C(0,-3)$ $D(3,0)$



Slopes

$$\text{slope } BA = \frac{3}{3} = 1 > \perp$$

$$\text{slope } AD = -\frac{3}{3} = -1 > \perp$$

$$\text{slope } CD = \frac{3}{3} = 1 > \perp$$

$$\text{slope } BC = -\frac{3}{3} = -1 > \perp$$

Distances

$$AD^2 = 3^2 + 3^2$$

$$AD = 3\sqrt{2}$$

$$AB^2 = 3^2 + 3^2$$

$$AB = \sqrt{18}$$

$$AB = 3\sqrt{2}$$

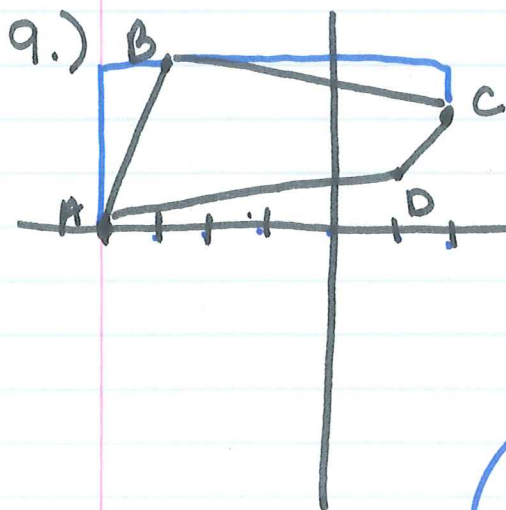
$$3^2 + 3^2 = CD^2$$

$$3\sqrt{2} = CD$$

$$BC^2 = 3^2 + 3^2$$

$$BC = 3\sqrt{2}$$

conclude ABCD has 4 \cong sides and 4 right angles \therefore it is a square by def



$A(-4,0)$ $B(-3,3)$ $C(2,2)$ $D(1,1)$

Slopes

$$\text{slope } AB = 3 > \text{not } \perp$$

$$\text{slope } BC = -\frac{1}{6}$$

slopes are not \perp \therefore ABCD cannot be a square by def.