

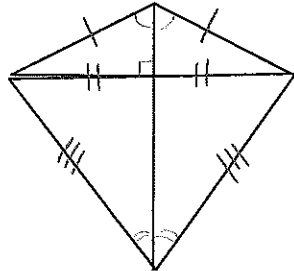
## 11.4 Area of Kites

### Area of Kites:

The area of a kite equals half the product of its diagonals.

$$A_{\text{kite}} = \frac{1}{2} d_1 d_2$$

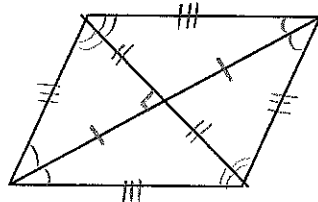
$d_1, d_2 =$   
diagonals



- ① Diagonals are  $\perp$ , one is bisected
- ② one diagonal bisects the angles of the kite
- ③ 2 pair of  $\cong$  adjacent sides

### Area of Rhobus

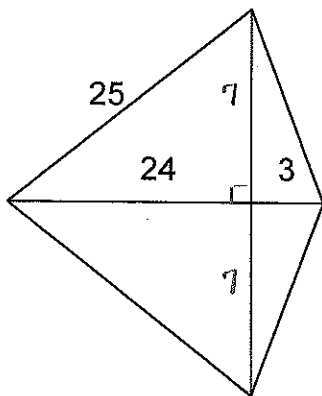
$$A_{\text{rhobus}} = \frac{1}{2} d_1 d_2$$



- ① Consecutive  $\angle$ 's supp.
- ② Opp  $\angle$ 's  $\cong$
- ③ Diagonals  $\perp$  bisectors
- ④ Diagonals bisect the  $\angle$ 's
- ⑤ All sides  $\cong$

### Examples:

1)



Find the area of the kite.

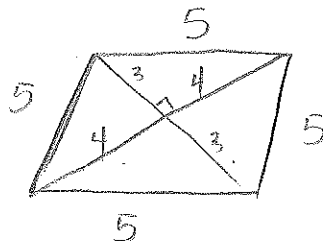
$$d_1 = 24 + 3 = 27$$

$$d_2 = 14$$

$$\begin{aligned} A &= \frac{1}{2} d_1 d_2 \\ &= \frac{1}{2} (27)(14) \\ &= \boxed{189} \end{aligned}$$

2)

Find the area of a rhombus whose perimeter is 20 and whose longer diagonal is 8.



$$20/4 = 5$$

$$d_1 = 8$$

$$d_2 = 6$$

$$\begin{aligned} A &= \frac{1}{2} (48) \\ &= \boxed{24} \end{aligned}$$