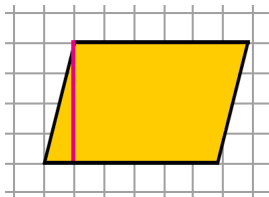
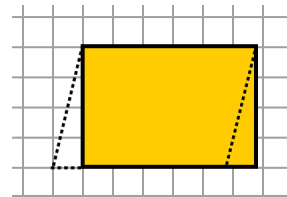
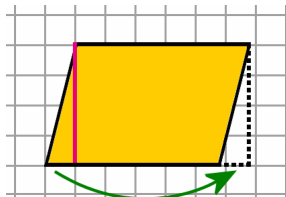


Area of Parallelograms

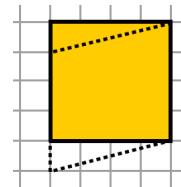
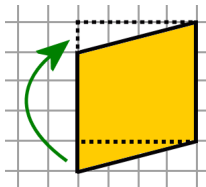


We draw a line from one vertex of the parallelogram in order to form a *right triangle*. Then we move the triangle to the other side, as shown. Look! We get a *rectangle*!



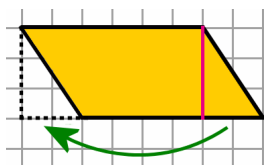
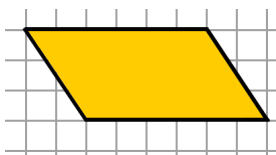
The rectangle's area is $6 \cdot 4 = 24$ square units, and that is *also the area of the original parallelogram*.

It works here, as well. The area of the rectangle and of the parallelogram are the same: both have the area of $4 \cdot 4 = 16$ square units.

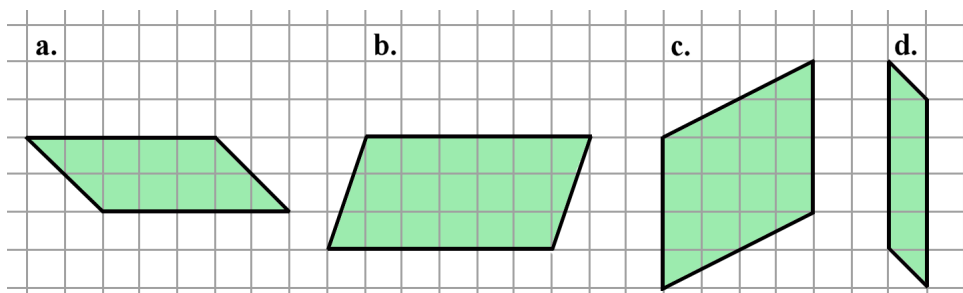


The area of a parallelogram is the same as the area of the corresponding rectangle.
You construct the rectangle by moving a right triangle from one side of the parallelogram to the other.

- Imagine moving the marked triangle to the other side as shown. What is the area of the original parallelogram?



- Draw a line in each parallelogram to form a right triangle. Imagine moving that triangle to the other side so that you get a rectangle, like in the examples above. Find the area of the rectangle, thereby finding the area of the original parallelogram.



a. _____ square units b. _____ square units

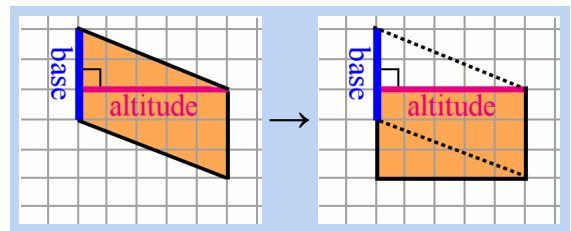
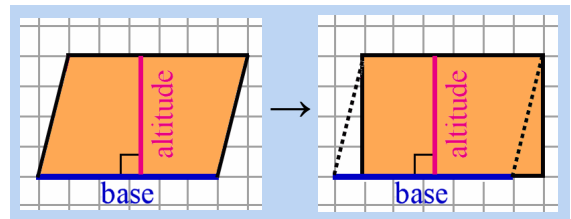
c. _____ square units d. _____ square units

One side of the parallelogram is called the **base**. You can choose any of the four sides to be the base, but people often use the “bottom” side.

A line segment that is *perpendicular* to the base and goes from the base to the opposite side of the parallelogram is called the **altitude**.

When we do the trick of “moving the triangle,” we get a rectangle. One of its sides is congruent (has the same length) to the parallelogram’s *altitude*. The other side is congruent to the parallelogram’s *base*.

That is why you can simply multiply **BASE × ALTITUDE** to get the area of a parallelogram.



3. Draw an altitude to each parallelogram. Highlight or “thicken” the base. Then find the areas.

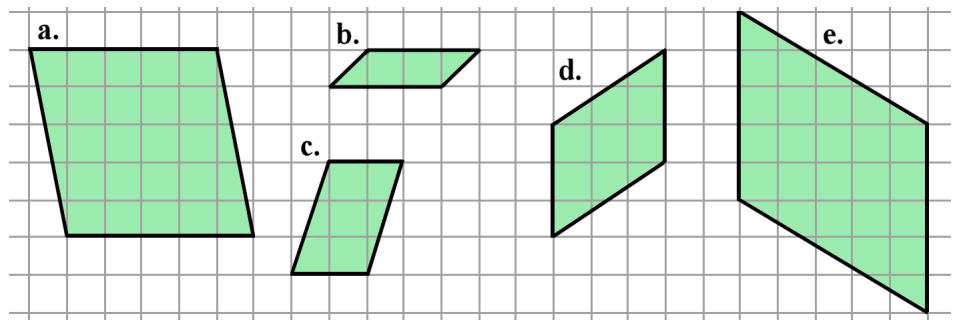
a. _____ sq. units

b. _____ sq. units

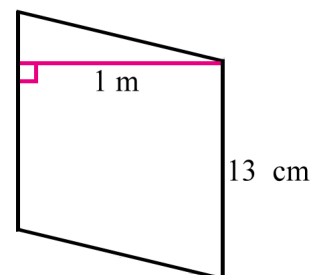
c. _____ sq. units

d. _____ sq. units

e. _____ sq. units



4. Find the area of the parallelogram in square *centimeters*.



5. Find the area of the parallelogram in square meters.

