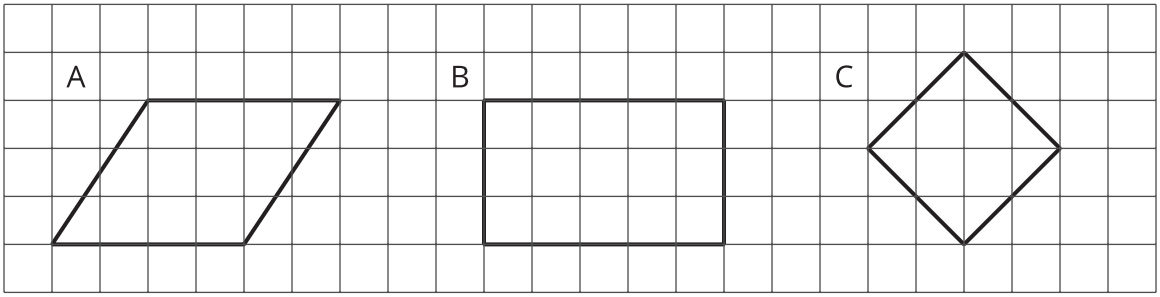
# Parallelograms

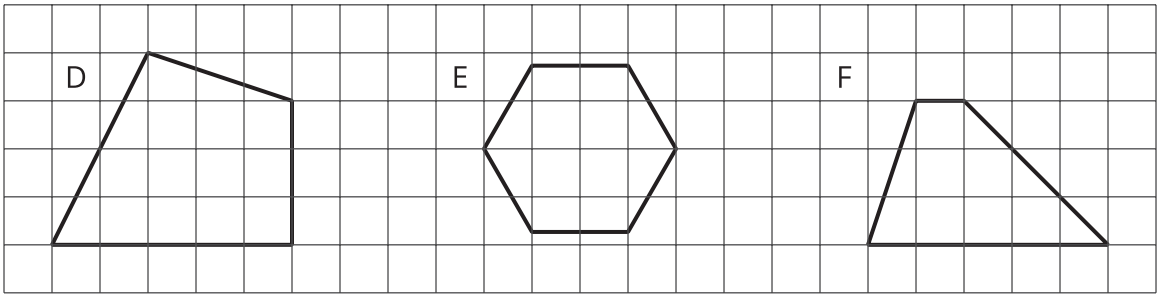
Let's investigate the characteristics and area of parallelograms.

## 4.1 What Are Parallelograms?

Figures A, B, and C are *parallelograms*.




Figures D, E, and F are not parallelograms.




What do you notice about:

1. The number of sides that a parallelogram has?

2. Opposite sides of a parallelogram?

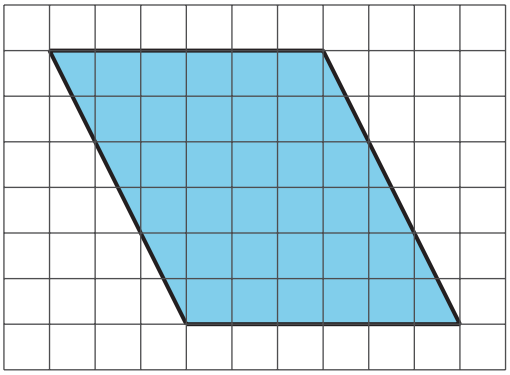
3. Opposite angles of a parallelogram?


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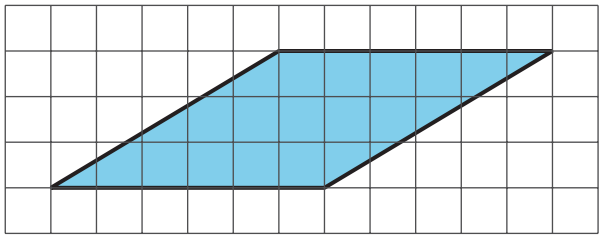
# 4.2 Area of a Parallelogram

Find the area of each parallelogram. Show your reasoning.

**1.**

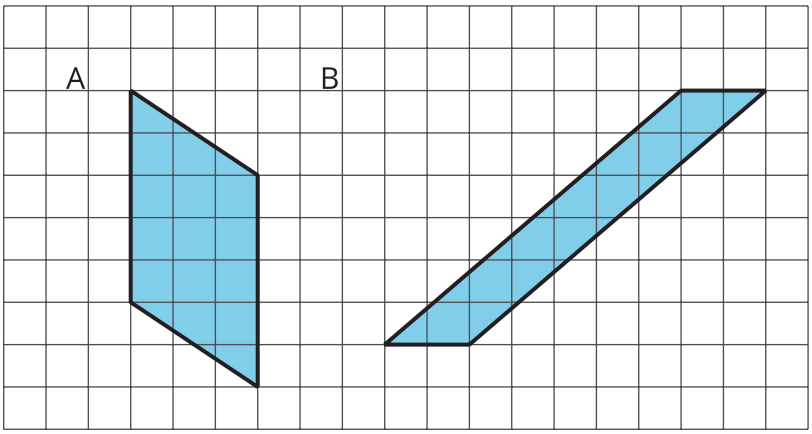


**2.**

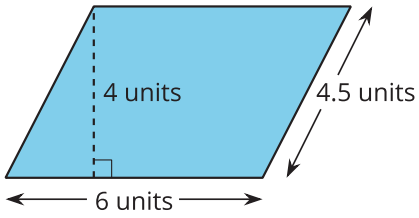


# 4.3 Lots of Parallelograms

Find the area of each parallelogram. Show your reasoning.

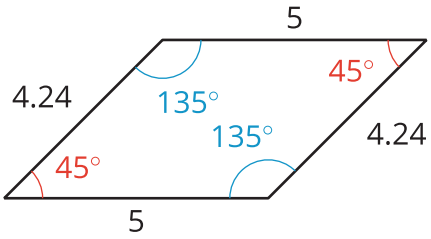


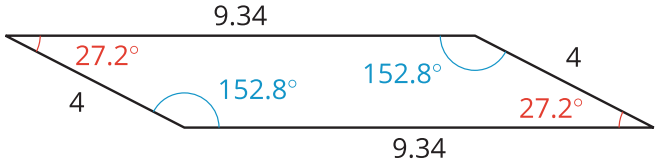

**C**



## Lesson 4 Summary

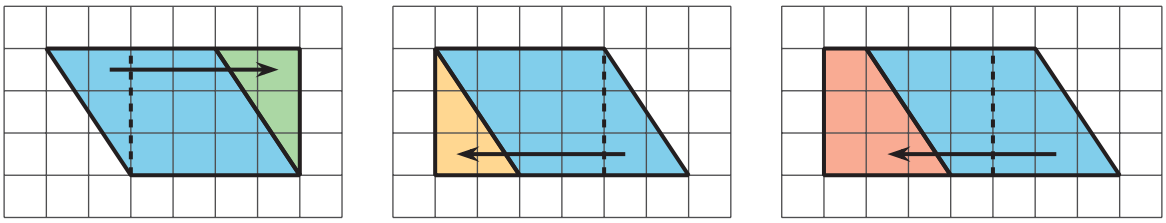
A *parallelogram* is a quadrilateral (it has four sides). The opposite sides of a parallelogram are parallel. The opposite sides of a parallelogram have the same length, and the opposite angles of a parallelogram have the same measure in degrees.



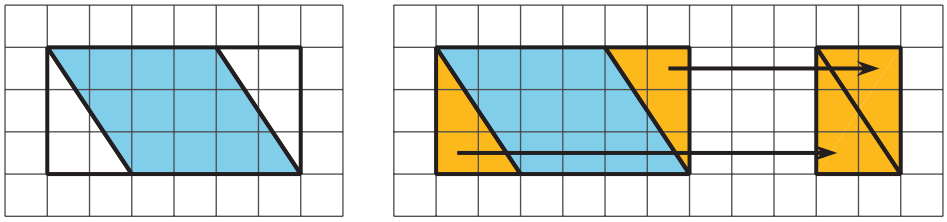




There are several strategies for finding the area of a parallelogram.

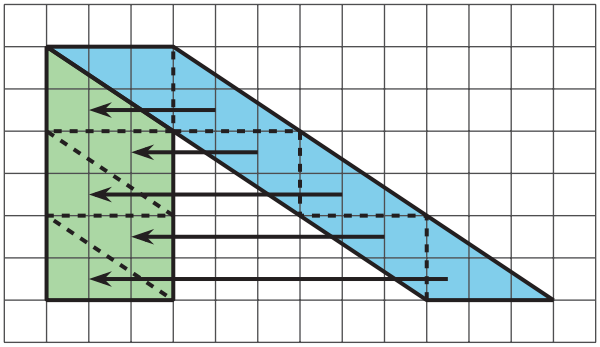
- We can decompose and rearrange a parallelogram to form a rectangle. Here are three ways:



- We can enclose the parallelogram and then subtract the area of the two triangles in the corner.



Both of these ways will work for any parallelogram. However, for some parallelograms the process of decomposing and rearranging requires a lot more steps than if we enclose the parallelogram with a rectangle and subtract the combined area of the two triangles in the corners.




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