

# Drawing Parallelograms

Use what you know about drawing parallel lines with a setsquare to draw square \_\_\_\_\_ with \_\_\_\_\_ cm. Explain how you created your drawing.

1. Draw rectangle with cm and cm.
2. Use a setsquare, ruler and protractor to draw parallelogram so that the measurement of cm, , and the altitude to is cm.
3. Use a setsquare, ruler and protractor to draw rhombus so that the measurement of , and each side of the rhombus measures cm.

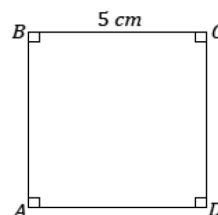
The following table contains partial information for a parallelogram . Using no tools, make a sketch of the parallelogram. Then use a ruler, protractor, and setsquare to draw an accurate picture.

			Altitude to		Altitude to
4.		cm		cm	
5.		cm		cm	
6.		cm	cm		

7. Use what you know about drawing parallel lines with a setsquare to draw trapezoid with parallel sides and . The length of is cm and the length of cm; the height between the parallel sides is cm. Write a plan for the steps you will take to draw .
8. Draw rectangle with cm and cm using appropriate tools.
9. Challenge: Determine the area of the largest rectangle that will fit inside an equilateral triangle with side length cm.

Use what you know about drawing parallel lines with a setsquare to draw square with \_\_\_\_\_ cm. Explain how you created your drawing.

Draw \_\_\_\_\_ (any side will do here) first. Align the setsquare and ruler so that one leg of the setsquare aligns with \_\_\_\_\_; mark a point \_\_\_\_\_, \_\_\_\_\_ cm away from \_\_\_\_\_. Draw a line parallel to \_\_\_\_\_ through \_\_\_\_\_. To create the right angle at \_\_\_\_\_, align the setsquare so that the leg of the setsquare aligns with \_\_\_\_\_ and situate the ruler so that the outer edge of the ruler passes through \_\_\_\_\_ and draw a line through \_\_\_\_\_. Mark the intersection of the line through \_\_\_\_\_ and the parallel line to \_\_\_\_\_ as \_\_\_\_\_; join \_\_\_\_\_ and \_\_\_\_\_. Repeat the steps to determine \_\_\_\_\_ and join \_\_\_\_\_ and \_\_\_\_\_.



1. Draw rectangle \_\_\_\_\_ with \_\_\_\_\_ cm and \_\_\_\_\_ cm.

Steps to draw the figure: Draw \_\_\_\_\_ first. Align the setsquare so that one leg aligns with \_\_\_\_\_ and place the ruler against the other leg of the setsquare; mark a point \_\_\_\_\_, \_\_\_\_\_ cm away from \_\_\_\_\_. Draw a line parallel to \_\_\_\_\_ through \_\_\_\_\_. To create the right angle at \_\_\_\_\_, align the setsquare so that its leg aligns with \_\_\_\_\_ and situate the ruler so that the outer edge of the ruler passes through \_\_\_\_\_ and draw a line through \_\_\_\_\_. Mark the intersection of the line through \_\_\_\_\_ and the parallel line to \_\_\_\_\_ as \_\_\_\_\_. Repeat the steps to determine \_\_\_\_\_.

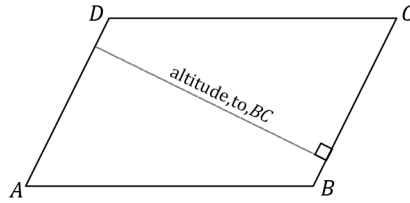
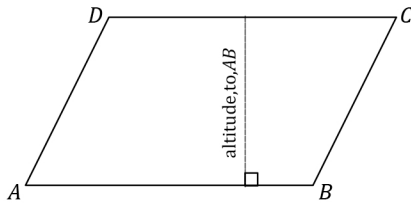
2. Use a setsquare, ruler and protractor to draw parallelogram \_\_\_\_\_ so that the measurement of \_\_\_\_\_, \_\_\_\_\_ cm, \_\_\_\_\_, and the altitude to \_\_\_\_\_ is \_\_\_\_\_ cm

Steps to draw the figure: Draw \_\_\_\_\_ first. Align the setsquare and ruler so one leg of the setsquare aligns with \_\_\_\_\_ and mark a point \_\_\_\_\_, \_\_\_\_\_ cm from \_\_\_\_\_. Slide the setsquare along the ruler so that one side of the setsquare passes through \_\_\_\_\_ and draw a line through \_\_\_\_\_; this line is parallel to \_\_\_\_\_. Using \_\_\_\_\_ as one ray of \_\_\_\_\_, draw \_\_\_\_\_ so that the measurement of \_\_\_\_\_ and that the ray \_\_\_\_\_ intersects with the line parallel to \_\_\_\_\_ (the intersection is \_\_\_\_\_). Draw \_\_\_\_\_ so that the measurement of \_\_\_\_\_; the ray \_\_\_\_\_ should be drawn to intersect with the line parallel to \_\_\_\_\_ (the intersection is \_\_\_\_\_).

3. Use a setsquare, ruler and protractor to draw rhombus \_\_\_\_\_ so that the measurement of \_\_\_\_\_, \_\_\_\_\_, and each side of the rhombus measures \_\_\_\_\_ cm.

Steps to draw the figure: Draw \_\_\_\_\_ first. Using \_\_\_\_\_ as one ray of \_\_\_\_\_, draw \_\_\_\_\_ so that the measurement of \_\_\_\_\_ . The other ray, or to-be side of the rhombus, \_\_\_\_\_, should be \_\_\_\_\_ cm in length; label the endpoint of the segment as \_\_\_\_\_. Align the setsquare and ruler so one leg of the setsquare aligns with \_\_\_\_\_ and the edge of the ruler passes through \_\_\_\_\_. Slide the setsquare along the ruler so that the edge of the setsquare passes through \_\_\_\_\_ and draw a line along the edge of the setsquare. This line is parallel to \_\_\_\_\_. Now align the setsquare and ruler so one leg of the setsquare aligns with \_\_\_\_\_ and the edge of the ruler passes through \_\_\_\_\_. Slide the setsquare along the ruler so that the edge of the setsquare passes through \_\_\_\_\_ and draw a line along the edge of the setsquare. This line is parallel to \_\_\_\_\_. Along this line, measure a segment \_\_\_\_\_ cm with \_\_\_\_\_ as one endpoint, and label the other endpoint \_\_\_\_\_. Join \_\_\_\_\_ to \_\_\_\_\_.

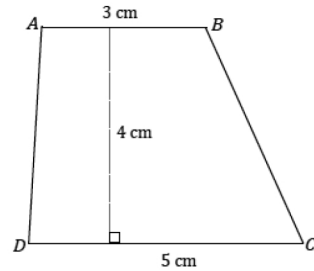
The following table contains partial information for a parallelogram . Using no tools, make a sketch of the parallelogram. Then use a ruler, protractor, and setsquare to draw an accurate picture.



			Altitude to		Altitude to
4.		cm	cm	cm	cm
5.		cm	cm	cm	cm
6.		cm	cm	cm	cm

7. Use what you know about drawing parallel lines with a setsquare to draw trapezoid with parallel sides and . The length of is cm and the length of cm; the height between the parallel sides is cm. Write a plan for the steps you will take to draw .

Draw (or ) first. Align the setsquare and ruler so that one leg of the setsquare aligns with ; mark a point , cm away from . Draw a line parallel to through . Once a line parallel to has been drawn through , measure a portion of the line to be cm and label either endpoint as and . Join to and to .



8. Draw rectangle with cm and cm using appropriate tools.

Draw first. Align the setsquare so that one leg aligns with and place the ruler against the other leg of the setsquare; mark a point, , cm away from . Draw a line parallel to through . To create the right angle at , align the setsquare so that its leg aligns with and situate the ruler so that its outer edge passes through , and then draw a line through . Mark the intersection of the line through and the parallel line to as . Repeat the steps to determine .

9. Challenge: Determine the area of the largest rectangle that will fit inside an equilateral triangle with side length cm

Students will quickly discover that rectangles of different dimensions can be drawn; finding the 'largest' rectangle may take multiple efforts. The maximum possible area is  $\text{cm}^2$ .