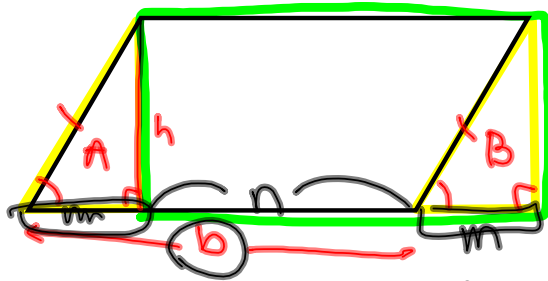


8.3.4 Use a clever dissection of a parallelogram to turn it into a rectangle and prove that the area of the parallelogram is its base times its height. Hints: 394



$\triangle A \cong \triangle B$
by AAS

since the area of rect.
is $b \cdot h$ as well
they have the same
area.

8.3.6 In this Exercise, we give another way of deriving the length of the median and area of a trapezoid.

Let $ABCD$ be a trapezoid with bases \overline{AB} and \overline{CD} .

- Extend \overline{AB} past B to A' such that $BA' = CD$, and extend \overline{DC} past C to D' such that $CD' = AB$. Prove that $AA'D'D$ is a parallelogram.
- Find the area of $[AA'D'D]$ in terms of AB , CD , and h , the distance between \overline{AB} and \overline{CD} . Find the relationship between $[AA'D'D]$ and $[ABCD]$, and then find $[ABCD]$ itself. Hints: 341
- Let M , N , and M' be the midpoints of \overline{AD} , \overline{BC} , and $\overline{A'D'}$, respectively. Prove that $MM' = AB + CD$, and prove that $MN = MM'/2$. Conclude that $MN = (AB + CD)/2$.

