Areas of quadrilaterals

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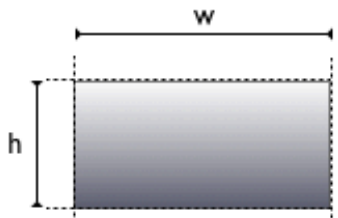
The area of a rectangle is the product of its width w and its height h:

$$A_{\text{rectangle}} = w \times h$$

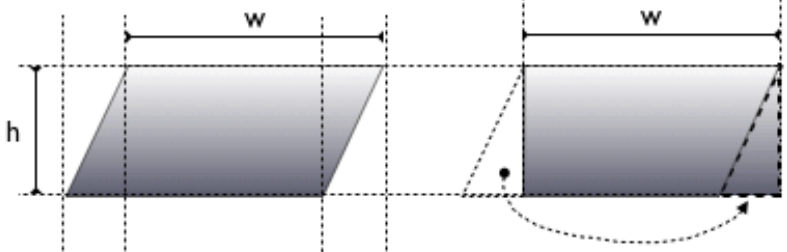
The square is a rectangle for which the width and height are both the length of its side s:

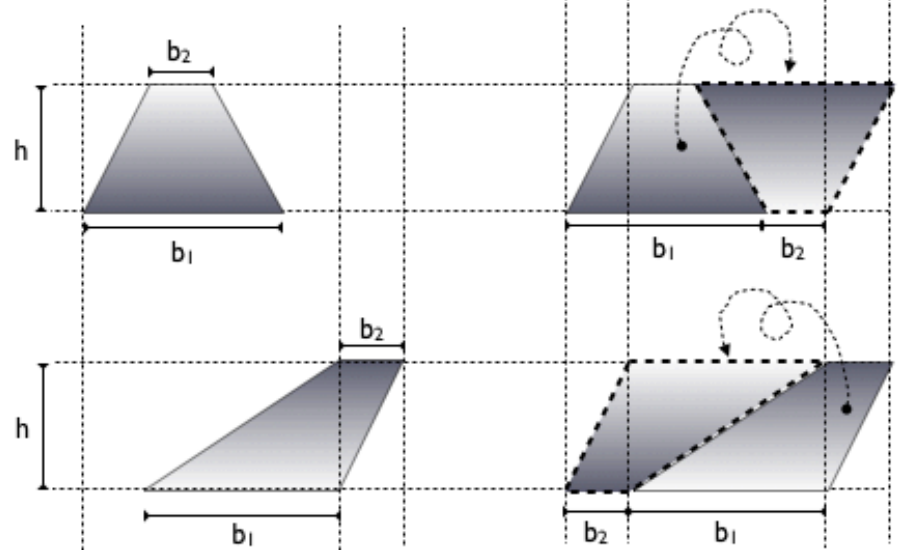
$$A_{\text{square}} = s^2$$



A parallelogram of width w and height h has the area of a rectangle of the same width and height:

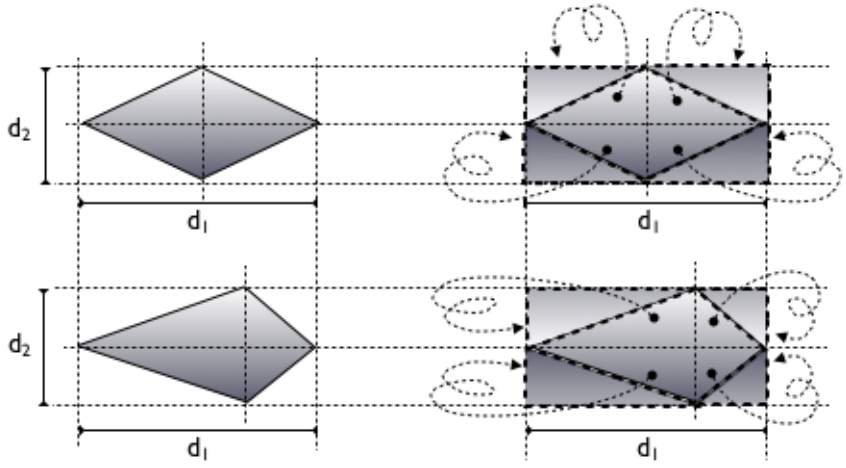
$$A_{\text{parallelogram}} = w \times h$$





We can use two copies of any trapezoid of bases b1 and b2, and height h, to create a parallelogram of base w = b1 + b2, and height h; thus, the area of original trapezoid is half the area of the parallelogram:

$$A_{\text{trapezoid}} = \frac{(b_1 + b_2) \times h}{2}$$



We measure the area of rhombuses and kites using their diagonals d1 and d2. We can use a copy of their quadrants to create a rectangle, so the area of the original rhombus or kite is half the area of the rectangle:

$$A_{\text{rhombus or kite}} = \frac{d_1 \times d_2}{2}$$