

3.12 Trapezoid with Inscribed Circle

Bases of a trapezoid: a, b

Lateral sides: c, d

Midline: q

Altitude: h

Diagonals: d_1, d_2

Angle between the diagonals: φ

Radius of inscribed circle: r

Radius of circumscribed circle: R

Perimeter: L

Area: S

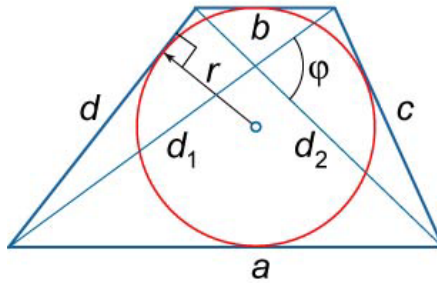


Figure 23.

230. $a + b = c + d$

231. $q = \frac{a + b}{2} = \frac{c + d}{2}$

232. $L = 2(a + b) = 2(c + d)$

233. $S = \frac{a + b}{2} \cdot h = \frac{c + d}{2} \cdot h = qh,$

$$S = \frac{1}{2} d_1 d_2 \sin \varphi.$$