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# SIMILITUDE OF SCALE

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Surface Area varies as the **Square** of the Dimensions. (l x w)

Volume (Displacement) varies as the **Cube** of the Dimensions. (l x w x h)

Stability varies as the **Fourth Power** of the Hull Dimensions. (l x w x h x righting arm)

Wetted Surface varies as the **Square** of the Dimensions.

Resistance varies as the **Cube** of the Dimensions.

Speed varies as the **Square Root** of the Waterline Length.

Sail Area varies as the **Square** of the Dimensions. (l x w)

Wind Pressure varies as the **Square** of the Wind Speed.

Heeling Moment varies as the **Cube** of the Dimensions. (sail l x w x heeling arm)

GM varies as the **Cube** of changes in Beam Only.

GM varies **Inversely** with Changes in Displacement Only. (lowers B-M)

Stability varies **Directly** with changes in Length Only. (if other dimensions remain same).

Stability varies as the **Square** of changes in Beam Only.

Stability varies as the **Fourth Power** of the Hull Dimensions. (l x w x h x righting arm)