

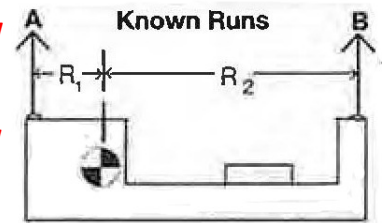
RIGGING FORMULAS

W	Load Weight
SLW	Share of Load Weight
R	Run
RS	Total Run (Span)
L	Sling Length
H	Height
TS	Tension in Sling
CG	Center of Gravity
F	Force
CF	Coefficient of friction

Share of Load Weight – known runs

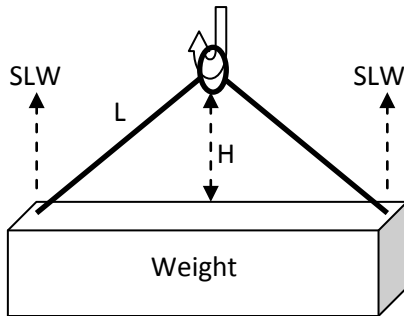
$$SLW A = \frac{R_2}{RS} \times W$$

$$SLW B = \frac{R_1}{RS} \times W$$



Sling Tension – sling length & hook height

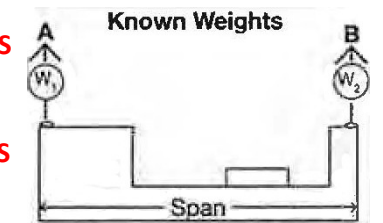
$$TS = \frac{L}{H} \times SLW$$



CG in feet from end – known weights

$$CG A = \frac{W_2}{W} \times RS$$

$$CG B = \frac{W_1}{W} \times RS$$



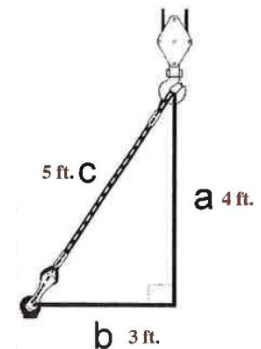
Pythagorean Theorem

$$a^2 + b^2 = c^2, \text{ so:}$$

$$a = \sqrt{c^2 - b^2},$$

$$b = \sqrt{c^2 - a^2},$$

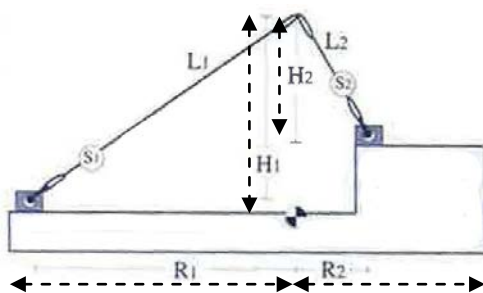
$$c = \sqrt{a^2 + b^2}$$



Sling Tension – off level pick points

$$TS1 = \frac{W \times R_2 \times L_1}{(R_2 \times H_1) + (R_1 \times H_2)}$$

$$TS2 = \frac{W \times R_1 \times L_2}{(R_2 \times H_1) + (R_1 \times H_2)}$$



Level & inclined planes

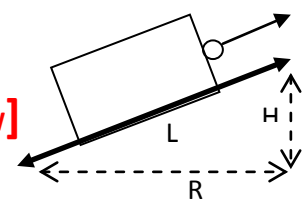
Level

$$F = CF \times W$$



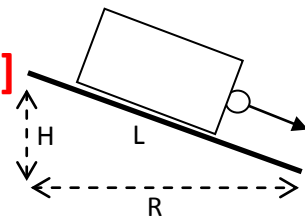
Uphill

$$F = \left[CF \times W \times \frac{R}{L} \right] + \left[\frac{H}{L} \times W \right]$$



Downhill

$$F = \left[CF \times W \times \frac{R}{L} \right] - \left[\frac{H}{L} \times W \right]$$



Circle Circumference = $\pi \times d$
 Circle Area = $\pi \times r^2$ or $d^2 \times .7854$

d = diameter
 r = radius