**Angle (A) between the straight lines**:

y =g1x + i1

y =g2x + i2

$$cosA=\frac{1+g\_{1}g\_{2}}{\sqrt{(1+ g\_{1}^{2})(1+ g\_{2}^{2})}}=cos⁡(A\_{1}-A\_{2})$$

$$1+(tanA)^{2}=\frac{1}{(cosA)^{2}}$$

cos(A1 – A2) = cosA1cosA2 - sinA1sinA2

**Parabolic form of a light cord of a heavy bridge**:

y = ax2 + c

c = H – D

$$a=\frac{H-c}{L^{2}}$$

Here H is the height of the pillar of the bridge, D is the deflection of the cord, L is half-length of the bridge.