



Ice Safety Latitude 43°N

**C:** Cobh (Queensland) coordinates are (51.8530°N, 8.2951°W).

**NYC:** New York City coordinates are (40.7128°N, 74.0060°W).

**V:** Coordinates of the Vertex of the great circle through **C** and **NYC** are  $(\phi_V, \lambda_V) = (52.9728^\circ\text{N}, 24.60836^\circ\text{W})$ .

Equation for the great circle through **C** and **NYC** is

$$\tan(\phi) = \tan(\phi_V) \cos(\lambda_V - \lambda)$$

$$\tan(\phi) = \tan(52.9728^\circ) \cos(24.60836^\circ - \lambda)$$

**X**: Point where the great circle through **C** and **NYC** crosses circle of latitude 43°N are (42.999°, 69.779°)

**Check**

$$\tan(42.999^\circ) = 0.9346400812$$

$$\tan(52.9728^\circ) \cos(24.60836^\circ - 69.779^\circ) = 0.9346400812.$$