

$$TAT = SAT + RAM \text{ rise}$$

$$(SAT = OAT)$$

Large scale \Rightarrow Small no

1 NM = 1852 m
1 SM = 1.62 km
1 m = 3.28 ft
1 inch = 2.54 cm
1 yard = 3 ft
1 ft = 12 inch
1 NM = 6080 ft

$$\text{distance off} = \frac{\text{track angle error}}{\text{distance gone}} \times 60$$

Earth circumference (2 π x Radius)
 $\approx 40000 \text{ km}$ (21600 NM)

$$\text{Gradient } [\%] = \frac{ROC \times 6000}{TAS \times 6080}$$

$$\tan \alpha \text{ (gradient numerical)} = \frac{ROC}{TAS}$$

$$\text{gradient } (\%) = \frac{\text{height (ft)}}{\text{distance (ft)}} \times 100$$

for polar charts: only Δ long without Δ lat

$$\text{convergence} = \text{change of long } (^\circ) \times \sin \text{ mean lat}$$

$$\text{Convergent angle} = \frac{1}{2} \times \text{convergence}$$

from Great circle to rhumb or opp

Initial gradient = Rhumb - GC

can be seen in 1/3 case both Rhumb line

$$\text{Gradient } \% = \frac{\text{alt diff (ft)} \times 100}{\text{ground dist (ft)}}$$

$$\text{Gradient } ^\circ = \frac{\text{vertical distance (ft)} / 60}{\text{ground dist (NM)}}$$

$$\text{convergence} = \Delta \text{ long} \times \sin \text{ lat}$$

$$\text{mercat} \quad \text{Lambert} \quad \text{polar}$$

$$0^\circ \text{ conv} \quad 0 < x < 1 \quad 1$$

CHARTS SUMMARY

MERCATOR CHART

CONVERGENCY = 0

SCALE: $\text{SCA} \cos B = \text{SCB} \cos A$

CORRECT @ EQUATOR

CYLINDRICAL PROJECTION

PARALLELS ARE PARALLEL

MERIDIAN ARE PARALLEL

THEY INTERSECT @ 90

GC CURVED TO THE POLE

RHUMB LINE STRAIGHT

space b/w parallels \propto lat

space b/w long equal

POLAR CHART

CONV = 1

CONV = Δ long

SCALE CORRECT AT THE POLE ONLY

PLANE PROJECTION

PARALLELS COEQUIDAL CIRCLES

MERIDIAN STRAIGHT LINES ORIGINATING AT THE POLE

INTERSECT @ 90

GC AND RH LINES CURVED TO THE POLE

GC CURVED MORE TOWARD

Q 53269 Answer

min 201 heading 101 CRPS

by 1/3 min 201 heading 101 CRPS

Q 2353

min 201 heading 101 CRPS

by 1/3 min 201 heading 101 CRPS

Q 2353

min 201 heading 101 CRPS

by 1/3 min 201 heading 101 CRPS

Q 2353

min 201 heading 101 CRPS

by 1/3 min 201 heading 101 CRPS

Q 2353

min 201 heading 101 CRPS

by 1/3 min 201 heading 101 CRPS

Q 2353

min 201 heading 101 CRPS

by 1/3 min 201 heading 101 CRPS

Q 2353

min 201 heading 101 CRPS

by 1/3 min 201 heading 101 CRPS

Q 2353

min 201 heading 101 CRPS

by 1/3 min 201 heading 101 CRPS

Q 2353

min 201 heading 101 CRPS

by 1/3 min 201 heading 101 CRPS

Q 2353

min 201 heading 101 CRPS

by 1/3 min 201 heading 101 CRPS

Q 2353

min 201 heading 101 CRPS

by 1/3 min 201 heading 101 CRPS

Q 2353

min 201 heading 101 CRPS

by 1/3 min 201 heading 101 CRPS