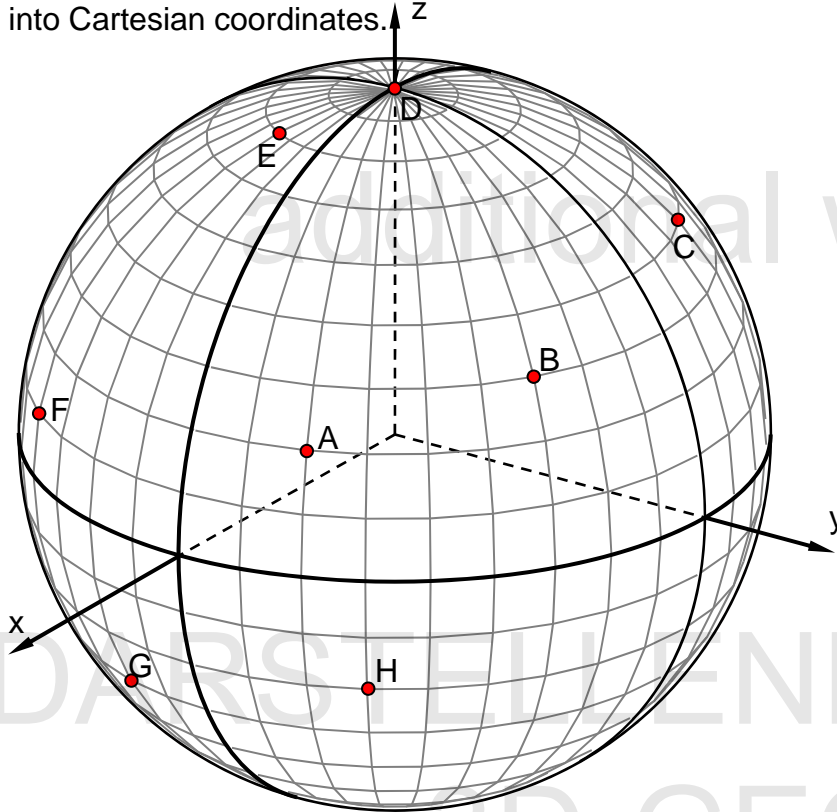
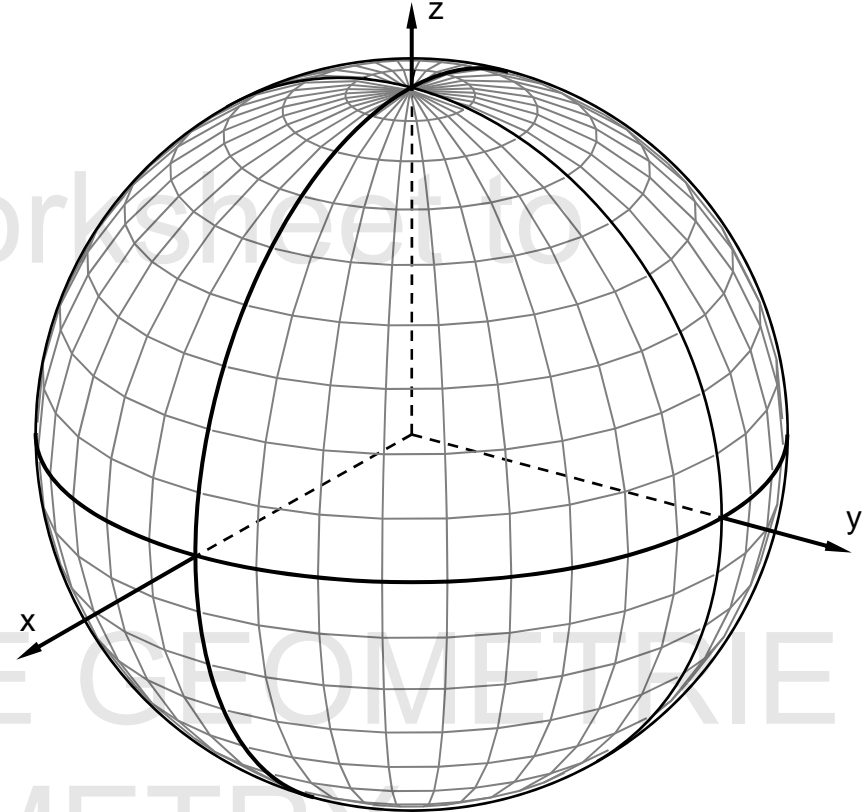


a) Determine the spherical coordinates (r, λ, β) of the given points on the sphere $[M= (0/0/0), r]$. Convert point A and G into Cartesian coordinates.



b) All points are given by spherical coordinates (r, λ, β) . Locate all points with respect to the given sphere $[M= (0/0/0), r]$.



A (.....)= A(.....);

B (.....); C (.....);

D (.....); E (.....);

F (.....); H(.....);

G (.....)= G(.....);

A $(r/ 10^\circ/ 40^\circ)$

B $(r/ 50^\circ/ -30^\circ)$

C $(r/ 100^\circ/ -20^\circ)$

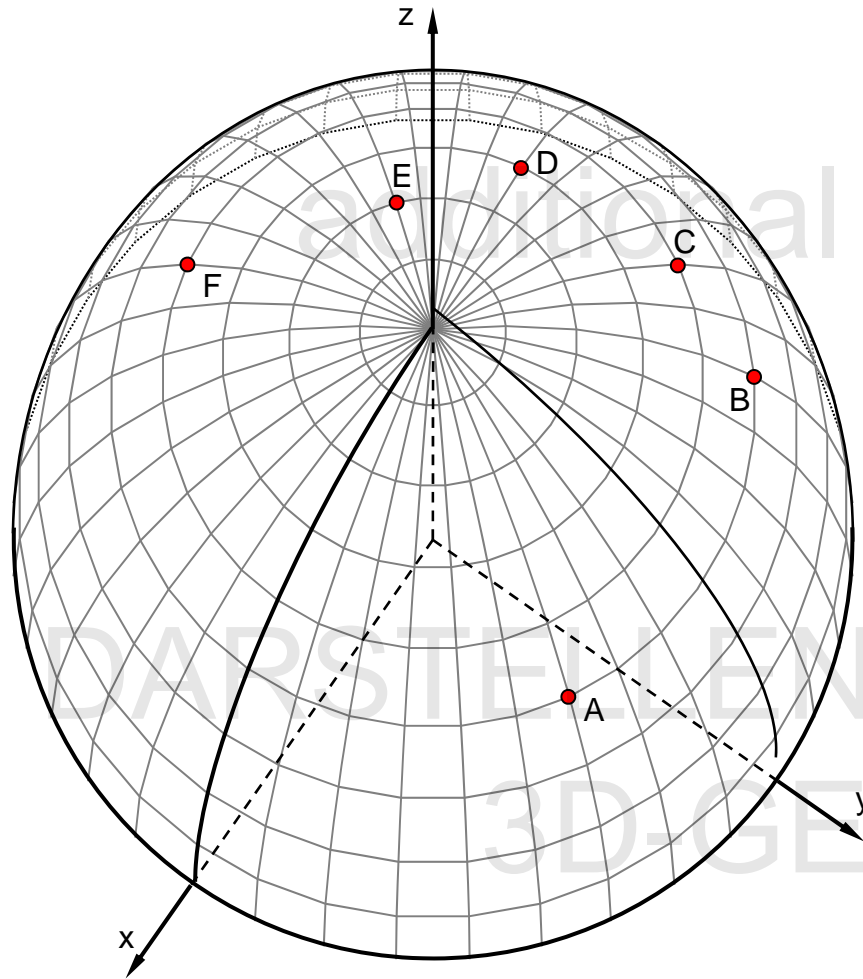
D $(r/ -40^\circ/ 30^\circ)$

E $(2r/ 60^\circ/ 50^\circ)$

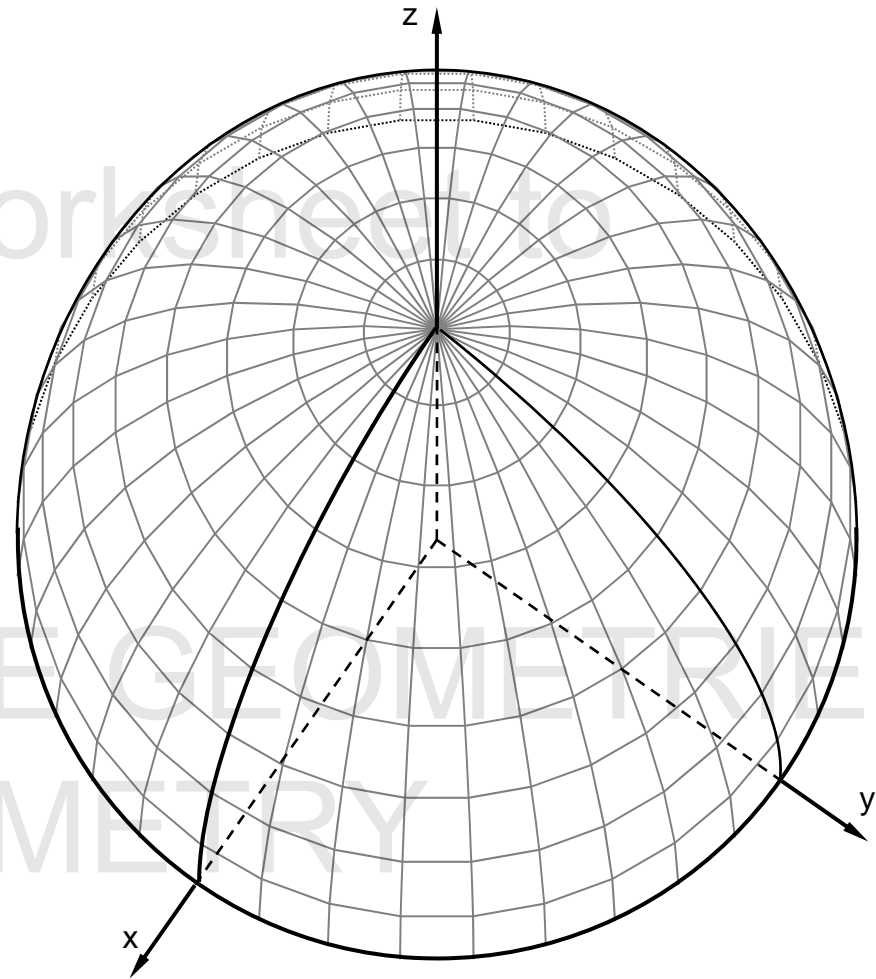
F $(\frac{r}{2}/ -40^\circ/ 10^\circ)$

c) Determine all spherical coordinates (r, λ, β) of the given points on the sphere $[M= (0/0/0), r]$.

d) All points are given by spherical coordinates (r, λ, β) . Locate all points with respect to the given sphere $[M= (0/0/0), r]$.

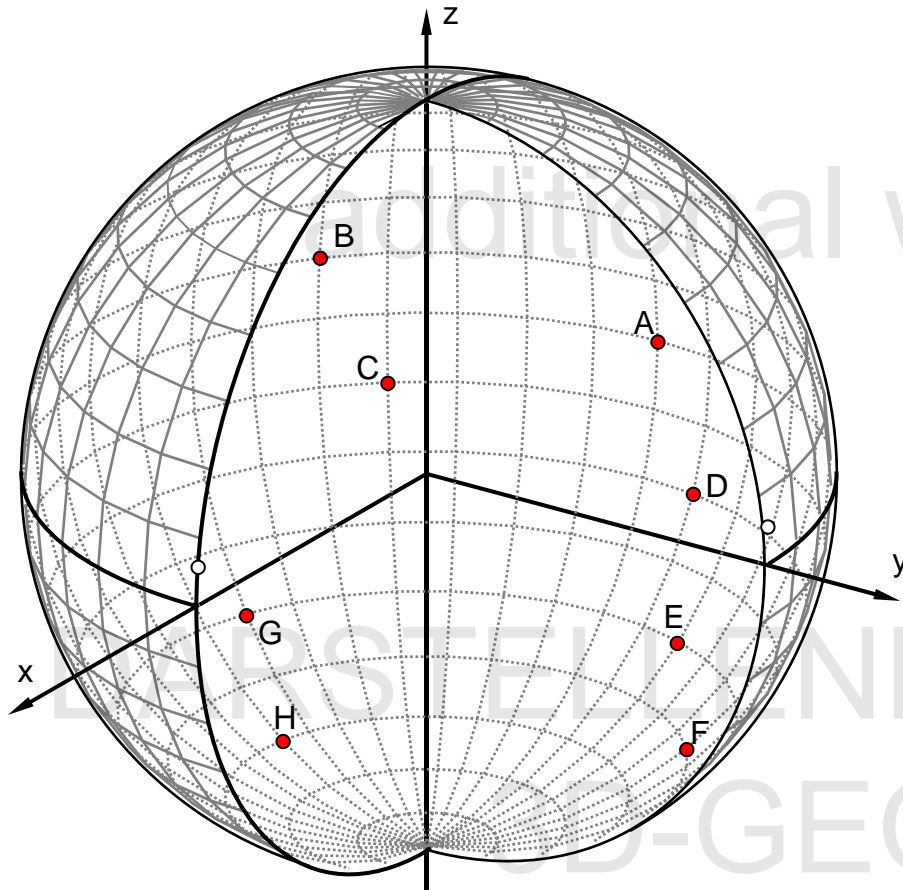


A(.....); B(.....);
 C(.....); D(.....);
 E(.....); F(.....);



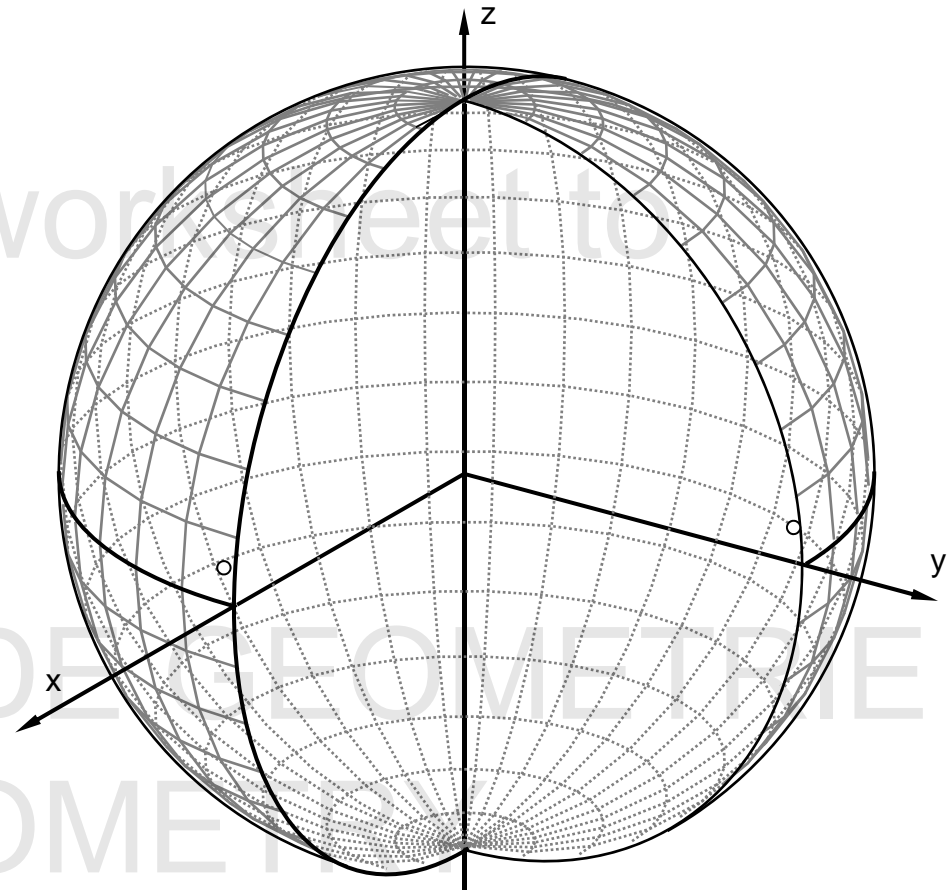
A $(r/ -40^\circ/ 60^\circ)$ B $(r/ 160^\circ/ 60^\circ)$
 C $(r/ -160^\circ/ 50^\circ)$ D $(r/ -80^\circ/ 40^\circ)$
 E $(2r/ -40^\circ/ 20^\circ)$ F $(\frac{r}{2}/ 70^\circ/ 10^\circ)$

e) Determine all spherical coordinates (r, λ, β) of the given points on the sphere $[M= (0/0/0), r]$.



A(.....); B(.....);
 C(.....); D(.....);
 E(.....); F(.....);
 G(.....); H(.....);

f) All points are given by spherical coordinates (r, λ, β) . Locate all points with respect to the given sphere $[M= (0/0/0), r]$.



A $(r / 170^\circ / -10^\circ)$

B $(r / 150^\circ / -40^\circ)$

C $(r / -170^\circ / -60^\circ)$

D $(r / -120^\circ / -20^\circ)$

E $(2r / 160^\circ / -50^\circ)$

F $(\frac{r}{2} / -10^\circ / -20^\circ)$