

Practice: all practice questions are from Math Makes Sense 9 pp. 389-391

• A small aircraft, A, is cruising at an altitude of 1.5 km. The radius of Earth is approximately 6400 km. How far is the plane from the horizon at B? Calculate this distance to the nearest kilometre.



A skydiver, S, jumps from a plane at an altitude of 3 km. The radius of Earth is approximately 6400 km. How far is the horizon, H, from the skydiver when she leaves the plane? Calculate this distance to the nearest kilometre.





• A circular mirror with radius 20 cm hangs by a wire from a hook. The wire is 30 cm long and is a tangent to the mirror in two places. How far above the top of the mirror is the hook? How do you know?



• A communications satellite orbits Earth at an altitude of about 600 km. What distance from the satellite is the farthest point on Earth's surface that could receive its signal? Give your answer to the nearest km.

6 Two cylindrical rods are bound with a strap. Each road has diameter 12 cm. How long is the strap? Give the answer to the nearest tenth of a centimetre. (The circumference *C* of a circle with diameter *d* is given by $C = \pi d$).

