

Practice: all practice questions are from Math Makes Sense 9 pp. $389-391$
(1) 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.

(2) 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.

(3) Point $O$ is the centre of the circle. Point $B$ is a point of tangency. Determine the values of $x, y$, and $z^{\circ}$. Give the answers to the nearest tenth where necessary.

(4) 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?

(5) 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 $C=\pi d$ ).


