Name

Describe the difference between density and specific gravity.

Density is the mass of an object (grams) per unit volume of the object (cm^3)

Specific gravity is the mass of the object compared to an equal volume of water.

Give reasons why earth's gravitational field is not uniform around the world.

1. The earth is not completely round
2. The mass of the earth is not uniform
3. The earth's surface has many irregularities (mountains, oceans, etc)

Describe the instrument used to measure earth's gravity.

A gravimeter is used to detect the earth's gravity. It uses a mass suspended from a sensitive spring and an accurate measuring system to measure the extension of the spring

Explain 2 different manners in which gravimeters are used.

1. They are used to plot gravity values along a survey line to create a profile of the area.
2. They are used to collect measurements of gravity at grid locations. These values can be contoured to create a gravity map.

Explain why it would be useful to find gravitational anomalies.

Gravity anomalies can be useful in petroleum exploration where it is desirable to search for anticlinal structures where oil traps can form.

Describe some of the corrections that must be made to interpret gravitational data.

1. Free air correction – compensates for the altitude the measurement is taken from
2. Bouquer correction – compensates for the material underneath the station where the data is collected
3. Latitude correction – compensates for the radius of the earth at the point where the data is collected
4. Terrain correction – compensates for the terrain (hill, valley) near the station where data is being collected.