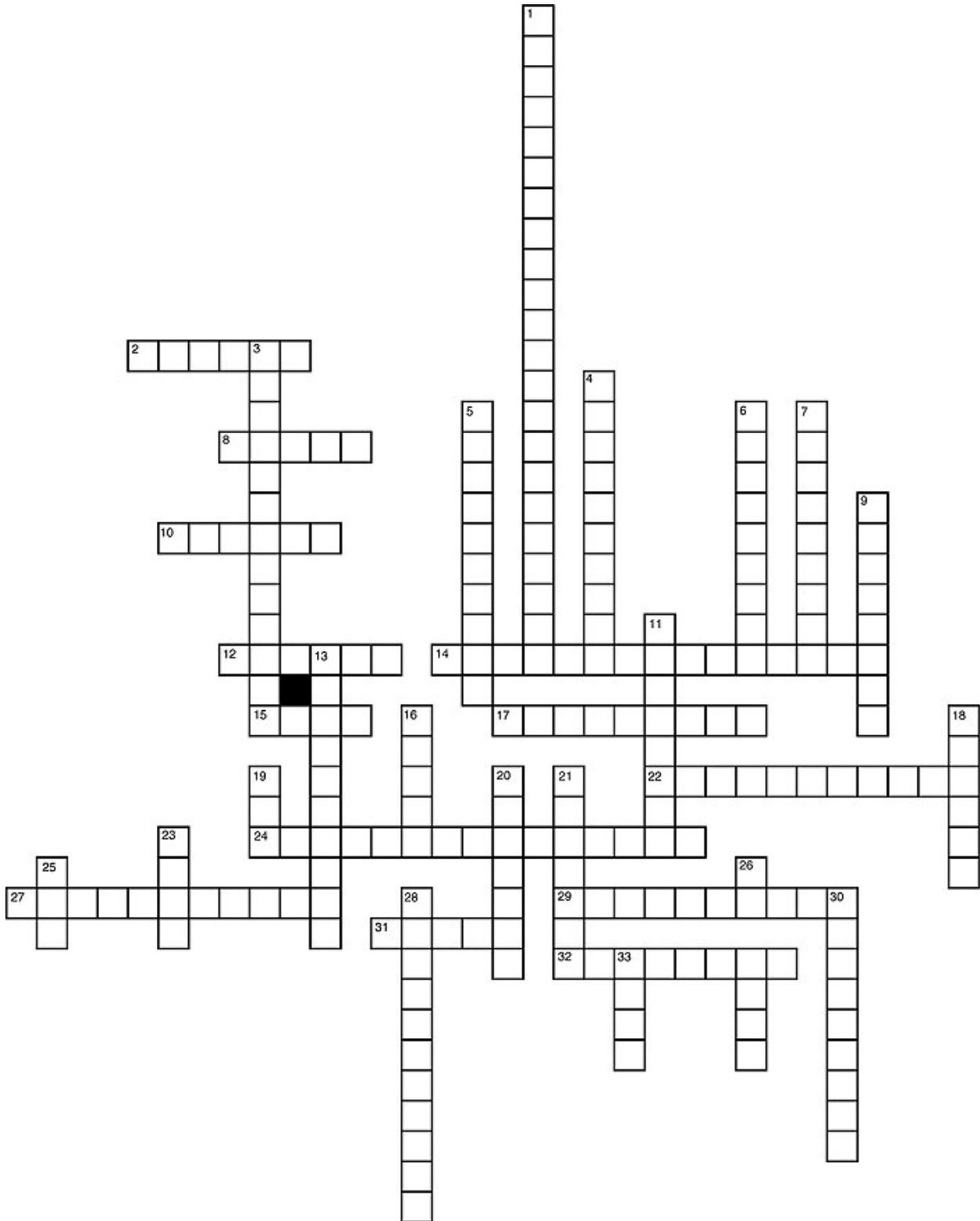


# Global Positioning Subject Review

1. The science of measuring and monitoring the size and shape of the Earth is \_\_\_\_\_.
2. By looking at the height, angles and distances between numerous locations on the Earth's surface, geodesists create a \_\_\_\_\_.
3. The Earth's surface rises and falls about 30 \_\_\_\_\_. Everyday under the gravitational influences of the moon and the sun.
4. The Earth's outermost layer is called the \_\_\_\_\_.
5. The plates that make up the Earth's outer layer ride atop a sea of molten rock called \_\_\_\_\_.
6. Plate \_\_\_\_\_ is the scientific discipline that looks at how the Earth's plates shift and interact, especially in relation to earthquakes and volcanoes.
7. The Greek philosopher \_\_\_\_\_ is credited as the first person to try and calculate the size of the Earth by determining its circumference.
8. A method of determining the position of a fixed point from the angles to it from two fixed points a known distance apart. \_\_\_\_\_
9. The Earth is flattened into the shape of an \_\_\_\_\_ sphere.
10. To measure the Earth, and avoid the problems that places like the Grand Canyon present, geodesists use a theoretical, like the Grand Canyon present, geodesists use a theoretical, created by rotating an ellipse around its shorter axis.
11. To account for the reality of the Earth's surface, geodesists use a shape called the \_\_\_\_\_ that refers to mean sea level.
12. The earth's mass is \_\_\_\_\_ distributed, meaning that certain areas of the planet experience more gravitational "pull" than others.
13. \_\_\_\_\_ are sets of data that are the basis for all geodetic survey work. In the United States, horizontal and vertical datums make up a system called the \_\_\_\_\_.
14. The \_\_\_\_\_ datum is a collection of specific points on the Earth that have been identified according to their precise northerly or southerly location and easterly or westerly location.
15. The northerly or southerly location of a point on the Earth's surface is known as the point's \_\_\_\_\_.
16. The easterly or westerly location of a point on the Earth's surface is known as the point's \_\_\_\_\_.

17. Surveyors mark positions with brass discs or monuments called \_\_\_\_\_.
18. Surveyors now rely almost exclusively on the \_\_\_\_\_ to identify locations on the Earth.
19. The \_\_\_\_\_ is where two plates of the Earth's crust meet, and is responsible for many earthquakes in California.
20. The \_\_\_\_\_ datum is a collection of positions whose heights above or below mean sea level is known.
21. The traditional method for setting vertical benchmarks is called \_\_\_\_\_  
leveling subsidence land sinking
22. Gravitational attraction between two bodies is stronger when the \_\_\_\_\_ of the objects are greater and closer together.
23. Because the Earth's mass and density vary at different locations on the planet, \_\_\_\_\_ also varies.
24. In areas where the Earth's gravitational forces are weaker, mean sea level will \_\_\_\_\_.
25. \_\_\_\_\_ measure the gravitational pull on a suspended mass.
26. \_\_\_\_\_ established the Survey of the Coast, which later evolved into the National Geodetic Survey.
27. The National Geodetic Survey uses markers made from long steel rods driven to \_\_\_\_\_ (pushed into the ground until they won't go any farther).
28. GPS receivers calculate the distance to GPS satellites by measuring \_\_\_\_\_.
29. GPS satellites have very precise clocks that tell time within three nanoseconds or three \_\_\_\_\_. (0.000000003) of a second.
30. \_\_\_\_\_ is a network of hundreds of stations permanently operating GPS receivers throughout the United States that can be used to accurately determine position.
31. In a \_\_\_\_\_, specific information about a place—such as the locations of utility lines, roads, streams, buildings, and even trees and animal populations—is layered over a set of geodetic data.

# Geodesy Subject Review: Crossword Puzzle



## Across

2. The Earth is flattened into the shape of an \_\_\_\_\_ sphere.
8. The plates that make up the Earth's outer layer ride atop a sea of molten rock called \_\_\_\_\_.
10. \_\_\_\_\_ are sets of data that are the basis for all geodetic survey work.
12. In areas where the Earth's gravitational forces are weaker, mean sea level will \_\_\_\_\_.
14. Established the Survey of the Coast, which later evolved into the National Geodetic Survey. [2 words]
15. In the United States, horizontal and vertical datums make up a system called the \_\_\_\_\_. [abbrev]
17. The easterly or westerly location of a point on the Earth's surface is known as the point's \_\_\_\_\_.
22. The Earth's surface rises and falls about 30 \_\_\_\_\_ everyday under the gravitational influences of the moon and the sun.
24. The \_\_\_\_\_ is where two plates of the Earth's crust meet and is responsible for many earthquakes in California. [3 words]
27. The traditional method for setting vertical benchmarks is called \_\_\_\_\_ leveling.
29. land sinking
31. The Earth's outermost layer is called the \_\_\_\_\_.
32. The northerly or southerly location of a point on the Earth's surface is known as the point's \_\_\_\_\_.

## Down

1. By looking at the height, angles and distances between numerous locations on the Earth's surface, geodesists create a \_\_\_\_\_. [3 words]
3. A method of determining the position of a fixed point from the angles to it from two fixed points a known distance apart.
3. \_\_\_\_\_ results in an overproduction of organic matter, especially algae.
4. Surveyors mark positions with brass discs or monuments called \_\_\_\_\_.
5. GPS satellites have very precise clocks that tell time within three nanoseconds or three \_\_\_\_\_ (0.000000003) of a second.

6. The Greek philosopher \_\_\_\_\_ is credited as the first person to try and calculate the size of the Earth by determining its circumference.
7. Plate \_\_\_\_\_ is the scientific discipline that looks at how the Earth's plates shift and interact, especially in relation to earthquakes and volcanoes.
9. The Earth's mass is \_\_\_\_\_ distributed, meaning that certain areas of the planet experience more gravitational "pull" than others.
11. The \_\_\_\_\_ datum is a collection of positions whose heights above or below mean sea level is known.
13. The \_\_\_\_\_ datum is a collection of specific points on the Earth that have been identified according to their precise northerly or southerly location and easterly or westerly location.
16. To account for the reality of the Earth's surface, geodesists use a shape called the \_\_\_\_\_ that refers to mean sea level.
18. Gravitational attraction between two bodies is stronger when the \_\_\_\_\_ of the objects are greater and closer together.
19. Surveyors now rely almost exclusively on the \_\_\_\_\_ to identify locations on the Earth. [abbrev]
20. Because the Earth's mass and density vary at different locations on the planet, \_\_\_\_\_ also varies.
21. The National Geodetic Survey uses markers made from long steel rods driven to \_\_\_\_\_ (pushed into the ground until they won't go any farther).
23. \_\_\_\_\_ is a network of hundreds of stationary permanently operating GPS receivers throughout the United States that can be used to accurately determine position. [abbrev]
25. In a \_\_\_\_\_, specific information about a place—such as the locations of utility lines, roads, streams, buildings, and even trees and animal populations—is layered over a set of geodetic data. [abbrev]
26. The science of measuring and monitoring the size and shape of the Earth.
28. \_\_\_\_\_ measure the gravitational pull on a suspended mass.
30. To measure the Earth, and avoid the problems that places like the Grand Canyon present, geodesists use a theoretical, mathematical surface called the \_\_\_\_\_ that is created by rotating an ellipse around its shorter axis.
33. GPS receivers calculate the distance to GPS satellites by measuring \_\_\_\_\_.

# WORD BANK

Aristotle

Geographic Information System

benchmarks

Global Positioning System

San Andreas Fault

datums

National Spatial Reference System

longitude

triangulation

time

magma

tectonics

masses

gravity

higher

gravimeters

Thomas Jefferson

geoid

unevenly

latitude

billionths

Continuously Operating Reference Stations

oblate

ellipsoid

geodesy

centimeters

horizontal

crust

vertical

differential

subsidence

refusal