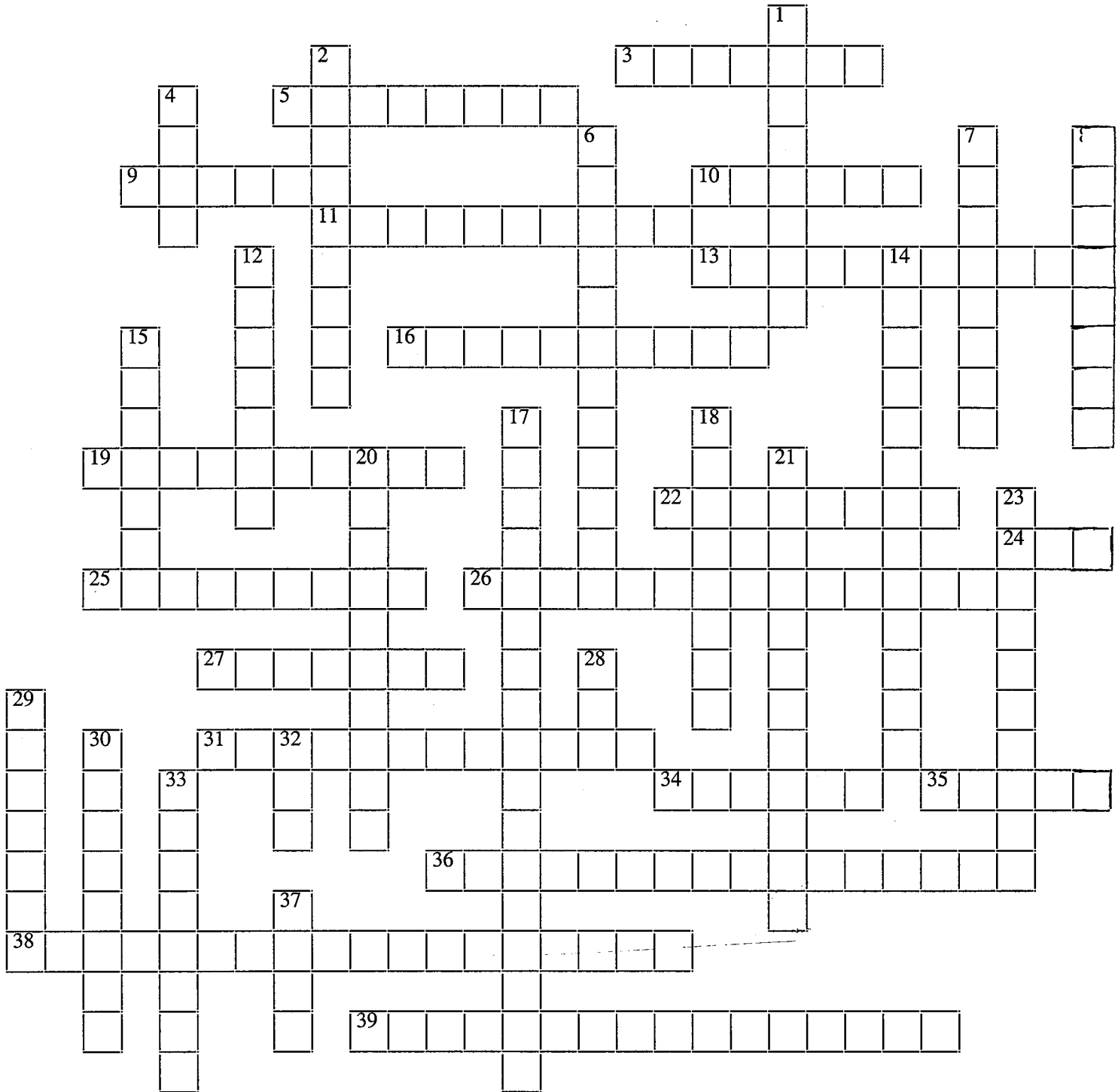


# Exam III Review



## ACROSS

- 3 Globular Clusters are \_\_\_\_\_.
- 5 It is 13-14 billion years old.
- 9 The sun rotates slower than stars that are \_\_\_\_\_ to the center of the galaxy.
- 10 HII regions, planetary nebulae, supernova remnants.
- 11 They make up 70% of all galaxies and contain only Population II stars.

## DOWN

- 1 The speed of light in all frames, moving or not, is \_\_\_\_\_.
- 2 Where a hot star has ionized a cloud of Hydrogen.
- 4 Population II stars, globular clusters, and dark matter are located in the \_\_\_\_\_ of the Galaxy.

- 13 Radiation that causes radio waves to be emitted from M87.
- 16 We know that it is there due to gravitational effects.
- 19 This says that the further a galaxy is the faster it is moving away.
- 22 M87 is a \_\_\_\_\_ type of galaxy that is most likely a result of a collision.
- 24 M82, M87, are called \_\_\_\_\_, which have jets of gas and emit x-rays.
- 25 The Large Magellanic Cloud is an \_\_\_\_\_ galaxy.
- 26 The laws of physics are the same in all \_\_\_\_\_.
- 27 Molecules like CO can be found here.
- 31 Age indicator of a cluster mapped on an H-R diagram.
- 34 Radio source with variable light output.
- 35 \_\_\_\_\_ stars are found in Spiral Galaxies in the disk where there is gas and dust.
- 36 It tells us how fast an object is moving away from us.
- 38 This is how far we are from the center of the galaxy (in lightyears).
- 39 Quasars are the most \_\_\_\_\_ objects in the known universe (two things).
- 6 One of the features of our galaxy that is at the center is the \_\_\_\_\_.
- 7 All stars in a cluster share this.
- 8 It is responsible for the radio spectrum line at 21 cm.
- 12 They make up 15% of all galaxies and can have a bar as part of their structure.
- 14 Centaurus A, Cygnus A, and Vergo A are all \_\_\_\_\_ that have twin lobes that span 1 million lightyears.
- 15 \_\_\_\_\_ clusters are very rich.
- 17 Dust that scatters Blue light.
- 18 The chance of a galactic collision is \_\_\_\_\_.
- 20 Our cluster of galaxies is called the \_\_\_\_\_ (it is very poor).
- 21 A cluster of galaxy clusters.
- 23 Non-Stellar galactic components.
- 28 It takes 250 million years for it to orbit our Galaxy.
- 29 A type of galaxy that emits a lot of energy, mostly in the IR, and has a small bright nucleus.
- 30 Particles that can go the speed of light are \_\_\_\_\_.
- 32 The color of Population II stars.
- 33 Open, galactic, and globular are all types of \_\_\_\_\_.
- 37 Population I stars are found in this part of the Galaxy.

Note: For a fee, you can use Crossword Weaver to print a nice copy of this puzzle (one that doesn't look like a web page). You can check it out for free by downloading the demo from [www.CrosswordWeaver.com](http://www.CrosswordWeaver.com) .