Quiz 8; Phys 100 Name _____

1. (4 points) According to the standard model, which of the following is *not* an elementary particle?

(a) antineutron

(b) neutrino

(c) antiquark

(d) photon

(e) electron

2. (4 points) Give the fundamental force each one of the following particles mediates:

- γ (photon): electromagnetism
- g (gluon) : strong nuclear force
- $W^{\pm}$ and Z^0: weak nuclear force

3. (4 points) According to string theory,

(a) Gravity is a non-quantum force

(b) Time travel into the past is possible

(c) Wormholes cannot exist

(d) The quantum aether is coagulated with multiple entanglements

(e) Fundamental particles are not mathematical points

4. (4 points) Approximately how many exoplanets have we discovered so far?

(a) 3×10^{-6}

(b) 3×10^{-3}

(c) 3

(d) 3×10^{3}

(e) 3×10^{6}

5. (4 points) Neil DeGrasse Tyson closes his book with reflections on a "cosmic perspective." How does learning more about how the universe works change your perspective? (I'm not looking for a correct answer, but some intelligent reflection.)

Answer: Answers will differ. You might be convinced by Tyson, or not—but you should have an argument backing up your position in either case.