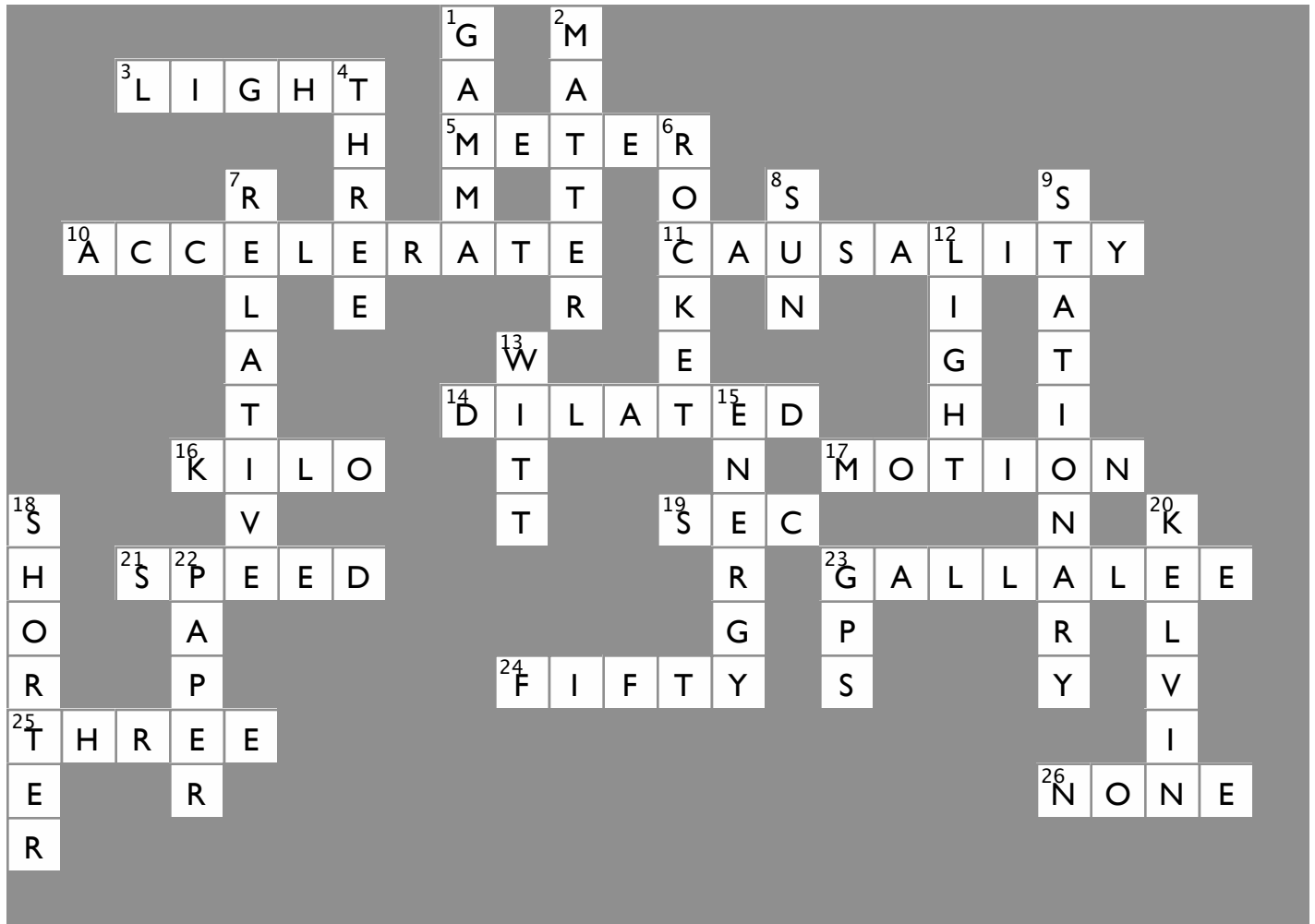


# Quiz I: Not what you were expecting

PHI02-I / LeClair  
Summer II 2008



## Across

3. Only one thing can go the cosmic speed limit. [LIGHT]
5. The correct unit for distance. [METER]
10. When you do this, your motion is not covered by special relativity. [ACCELERATE]
11. Absolute timing is out the window, but this is preserved [CAUSALITY]
14. Time intervals for moving observers, compared to those at rest [DILATED]
16. The correct unit for mass. [KILO]
17. You seem thinner, but only along your direction of [MOTION]
19. The correct unit for time. [SEC]
21. Even in relativity, kinetic energy depends on this. Its just more complicated [SPEED]
23. You are here. [GALLALEE]
24. There are this many of you, roughly (multiple of ten). [FIFTY]

## Down

1. This is both the time dilation and length contraction factor [GAMMA]
2. Convertible into energy [MATTER]
4. This many observers, and we need the velocity addition formula [THREE]
6. Featured prominently in many relativity examples [ROCKET]
7. All motion is [RELATIVE]
8. Earth revolves around it [SUN]
9. This type of observer measures "proper" quantities [STATIONARY]
12. Its speed is our only invariant [LIGHT]
13. The president of the university [WITT]
15. Einstein's most famous equation relates mass to this [ENERGY]
18. A spaceship is moving toward you at high speed. Compared to seeing the ship at rest, it is ... [SHORTER]

**Across**

25. You have this many lab TAs. [THREE]  
26. The units of gamma [NONE]

**Down**

20. This is the correct unit for temperature [KELVIN]  
22. This week's lab [PAPER]  
23. Relies on relativity for its fantastic accuracy [GPS]