Answers to Test 3, 1998

1. (a) 2
   (b) $2\pi - 2$
   (c) $2\sqrt{2} - 2$

2. $(r, \theta, z) = (1, 0, 1)$
   $(\rho, \theta, \phi) = (\sqrt{2}, 0, \pi/4)$

3. 55

4. $\displaystyle\int_0^1 \int_0^{\sqrt{4-y^2}} \int_0^{4-x^2-y^2} dz\, dx\, dy$

5. $4\pi/3$

6. $2\pi^2$