6. Višestruki integrali, 2. dio - Rješenja

1. (a) $I = \int_{-2}^{2} dx \int_{-\sqrt{4-x^2}}^{\sqrt{4-x^2}} dy \int_{-\sqrt{4-x^2-y^2}}^{\sqrt{4-x^2-y^2}} f(x,y,z)\, dz$

   (b) $I = \int_{-5}^{5} dx \int_{-\sqrt{25-x^2}}^{\sqrt{25-x^2}} dy \int_{\sqrt{x^2+y^2}}^{5} f(x,y,z)\, dz$

2. $I = \dfrac{1}{110}$

3. $I = -\dfrac{5}{16} + \dfrac{1}{2}\ln 2$

4. $I = \dfrac{3}{2}$

5. $I = \dfrac{8}{9}a^2$

6. $I = \dfrac{3\pi}{2}$

7. $I = \dfrac{8\pi}{9}\left(2\sqrt{2}-1\right)$

8. (a) $V = \dfrac{81\pi}{4}$

   (b) $V = \dfrac{2\pi\sqrt{2}}{3}a^3$

   (c) $V = \dfrac{19\pi}{6}$

   (d) $V = \dfrac{\pi}{2}$

9. (a) $V = 8$

   (b) $V = \dfrac{\pi}{8}$

(c) $V = \dfrac{7}{2}$

(d) $V = \dfrac{\pi}{2}$

10. $V = \dfrac{4\pi}{3}R^3$
11. $T(0, 0, \frac{3}{4}h)$
12. $T(0, 0, \frac{7}{6})$