

Rješenja 7. domaće zadaće iz Matematike 3E

1. a) 8π , b) $\frac{256a^3}{15}$, c) $\frac{2ka^2\sqrt{1+k^2}}{1+4k^2}$

2. a) $\frac{16\sqrt{2}}{143}$, b) $\frac{a^4\pi}{2\sqrt{2}}$

3. a) 5, b) $\sqrt{3}$

4. a) $\frac{3}{4}$, b) $\frac{2R^3}{3}$, c) 0

5. a) $\frac{87}{4}$, b) $a^3\pi$, c) $\frac{3\pi}{2}$

6. -4π

7. a) $\sqrt{115}$, b) 0

9. a) $p(x, y, z) = \sqrt{x^2 + y^2 + z^2} + C$, b) $p(x, y, z) = \frac{1}{3}(x^3 + y^3 + z^3) - 2xyz + C$

10. a) $u(x, y) = x^2 \cos y + y^2 \cos x + C$, b) $u(x, y) = x - \frac{x}{y} + \frac{xy}{z} + C$

11. $\frac{8}{3}a^4\pi$

12. $x_T = y_T = 0$, $z_T = \frac{5\sqrt{5}a}{2(5\sqrt{5}-1)}$

13. a) 4π , b) $\frac{7\sqrt{7}-1}{3}\pi$

14. $\frac{8}{3}abc\pi$

15. $\frac{2}{3}R^3\pi - \frac{R\pi}{4}$

16. a) $4/3$, b) $3/2$

17. 24π

18. 2π

19. 0

20. $\frac{\pi}{4}$