

MAT216 – Cálculo Diferencial e Integral III
Respostas da Lista de Exercícios 4

1. (a) $-14/15$ (b) $-2\pi a^2$ (c) $1/35$ (d) $4/3$ (e) 0 (f) 40 (g) $23/6$ (h) $5/2$
2. (a) $-369/10$ (b) -2π (c) 0 (d) $-2\sqrt{2}\pi$ e $-\pi$.
3. $23/6$
4. 0
5. (a) $1 + \sqrt{2}$ (b) $256a^3/15$
7. $8r^2$
8. $2\pi/3$
10. (b) $(2e^{2\pi} - 5e^\pi - 5\pi - 3)/10$
11. (b) 3
12. $4b^2 - 8\pi b + 4$; $b = \pi$
13. (a) $\frac{1}{2}(x^2 + y^2) + c$ (b) $x^3y + c$ (c) $x^2e^y + xy - y^2 + c$ (d) $x \sin y + y \cos x + (x^2 + y^2)/2 + c$
(e) $x \sin(xy) + c$ (f) $(x^2 + y^2 + z^2)/2 + c$ (g) $x^2/2 - y^2/2 + xz - yz + c$ (h) Não admite. (i) Não admite. (j) Não admite. (k) $y^2 \sin x + xz^3 - 4y + 2z + c$ (l) $x + 2x^2y - x^3z^2 + 2y - z^3 + c$
14. $\varphi(x) = \frac{1}{\alpha+2}||x||^{\alpha+2}$ se $\alpha \neq 2$ e $\ln ||x|| + c$ se $\alpha = 2$.
15. (b) 2π (c) Não.
16. (a) F (b) V (c) F (d) F (e) V (f) F