

习题 7.2

1. 8;

2. $\frac{2}{3}\pi R^3$;

3. $-2\sqrt{3}\pi a^2$;

4. $\frac{3k\pi}{16}a^2$;

5. 0;

6. $1 + e^{-1}$;

7. 9;

8. $\frac{\pi}{2}(b-a)a^2 + 2a^2b$;

9. 略

10. $Q(x, y) = x^2 + 2y - 1$;

11. $\lambda = 3$; $-15\frac{4}{5}$;

12. $a = b = -1$; $u(x, y) = \frac{x-y}{x^2+y^2}$;

13. $2\pi R^2$;

14. $\frac{64}{15}\sqrt{2}a^4$;

15. $c\pi R^2 + 2\pi R^3$;

16. $4\pi ab\left(\frac{1}{a^2} + \frac{1}{b^2} + \frac{1}{c^2}\right)$;

17. $4\pi R^4$;

18. 34π ;

19. $\frac{93}{5}\pi(2 - \sqrt{2})$;

20. $-\frac{9}{2}$;

21. -3π ;

22. 0.