

Partial solutions for 1-17(odds) 20 21 46 49 51 53

1. $\int_1^5 \int_0^x (8x - 2y) dy dx = 868/3$

3. $\int_0^1 \int_0^y x e^{y^3} dx dy = \frac{1}{6}(e - 1)$

5. $\int_0^1 \int_0^{s^2} \cos(s^3) dt dt = 1/3 \sin(1)$

7. $\int_0^4 \int_0^{\sqrt{x}} \frac{y}{x^2 + 1} dy dx = 1/4 \ln 17$

9. $\int_0^3 \int_0^y e^{-y^2} dx dy = 1/2(1 - e^{-9})$

11. picture not included :(

13. $\int_0^1 \int_0^x x dy dx = \int_0^1 \int_y^1 x dx dy = 1/3$

15. $\int_{-1}^2 \int_{y^2}^{y+2} y dx dy = 9/4$

17. $\int_0^1 \int_0^{x^2} x \cos y dy dx = 1/2(1 - \cos 1)$

20. $\int_0^1 \int_0^{\sqrt{1-x^2}} xy dy dx = 1/8$

21. $\int_{-2}^2 \int_{-\sqrt{4-x^2}}^{\sqrt{4-x^2}} (2x - y) dy dx = 0i$

46. $\int_0^2 \int_{x^2}^4 f(x, y) dy dx = \int_0^4 \int_0^{\sqrt{y}} f(x, y) dx dy$

49. $\int_1^2 \int_0^{\ln x} f(x, y) dy dx = \int_0^{\ln 2} \int_{e^y}^2 f(x, y) dx dy$

51. $\int_0^1 \int_{3y}^3 e^{x^2} dx dy = \int_0^{x/3} e^{x^2} dy dx = (e^9 - 1)/6$

53. $\int_0^1 \int_{\sqrt{x}}^1 \sqrt{y^3 + 1} dy dx = \int_0^1 \int_0^{y^2} \sqrt{y^3 + 1} dx dy = \frac{2}{9}(2\sqrt{2} - 1)$

10. 4/3

12. NA

14. 243/9

18. 23/84

19. 11/3

22. 2/3

47. $\int_0^{\pi/2} \int_0^{\cos x} f(x, y) dy dx = \int_0^1 \int_0^{\cos^{-1} y} f(x, y) dx dy$

52. $\int_0^1 \int_0^{\sqrt{y}} \sqrt{y} \sin y dx dy = \sin 1 - \cos 1$