Symbolab

Multiple Integrals

Double

Triple

1. $\int_0^{2\pi}\int_0^1\int_4^{4r^2}\cos(\theta)r^2dzdrd\theta$

2. $\int_0^2\int_y^{2y}\int_{-\sqrt{z}}^{\sqrt{z}}xdxdzdy$

3. $\int_0^{2\pi}\int_0^1\int_{9r^2}^{8-9r^2}r^2dzdrd\theta$

4. $\int_0^{2\pi}\int_0^{\frac{2}{3}}\int_0^{4-9r^2}r^2dzdrd\theta$

5. $\int_0^4\int_{-4}^4\int_0^{y^2}1dzdydx$

6. $\int_0^{2\pi}\int_1^{\sqrt{2}}\int_r^{2-r^2}\left(2-2r^2\right)rdzdrd\theta$

7. $\int_0^{\pi}\int_0^1\int_0^{-(-1+r)}r^2zdzdrd\theta$

8. $\int_0^1\int_{\sqrt{z}}^1\int_z^{x^2}(5+4x)dydxdz$

9. $\int_0^1\int_0^{\ln(8)}\int_0^{\ln(16)}30e^{-x-y-z}dzdydx$

10. $\int_0^{2\pi}\int_0^{0.4636}\int_0^2\sin(\varphi)p^2dpd\varphi d\theta$

Symbolab

Answers

Multiple Integrals

Double

Triple

1. 0

2. 0

3. $-\frac{28\pi}{15}$

4. $\frac{128\pi}{405}$

5. $\frac{512}{3}$

6. $\frac{\pi\left(3+8\sqrt{2}\right)}{15}$

7. $\frac{\pi}{60}$

8. $\frac{5}{6}$

9. $\frac{1575\left(e-1\right)}{64e}$

10. $1.76853\ldots$