

MA 111 Tutorial Answer Key

January 2021

1 Tutorial 1

1. (a) 1
(b) $\frac{7}{6}$
2. (a) 1
(b) $\frac{27\pi}{4}$
4. $\int_{y=0}^1 \int_{x=0}^1 f(x, y) dx dy = -1$ and $\int_{x=0}^1 \int_{y=0}^1 f(x, y) dy dx = 1$
5. (a) Equal, $4\ln(2) - 2$
(b) Equal, $\frac{\sin(1)}{9}$
6. (b) $\frac{(2^{r+1} - 1)(2^{s+1} - 1)}{(r + 1)(s + 1)}$
(c) 1
7. (a) 50
(b) $\frac{45}{4} + \frac{15}{2} \log\left(\frac{3}{2}\right)$