

Worksheet #18; date: 03/19/2018
MATH 53 Multivariable Calculus

1. (Stewart 15.1.21) $\int_1^4 \int_1^2 \left(\frac{x}{y} + \frac{y}{x} \right) dy dx$
2. (Stewart 15.1.43) Find the volume of the solid enclosed by the paraboloid $z = 2 + x^2 + (y - 2)^2$ and the planes $z = 1$, $x = 1$, $x = -1$, $y = 0$, and $y = 4$.
3. Use symmetry to evaluate the double integral.

$$\iint_R \frac{(x+2)y}{1+x^2} dA, \quad R = \{(x, y) \mid -1 \leq x \leq 1, 0 \leq y \leq 1\}$$

4. Quiz time!
5. (Stewart 15.2.17) $\iint_D x \cos y dA$, where D is bounded by $y = 0$, $y = x^2$, $x = 1$.
6. (Stewart 15.2.21) $\iint_D (2x - y) dA$, where D is bounded by the circle with center the origin and radius 2.