

**Worksheet #18; date: 03/20/2018**  
**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.