

Multiple Variable Integration Review Name _____

Integrate all the functions below completely with respect to the indicated variable. Be sure to note which variables the "constant" is a function of. Simplify each expression as much as possible.

1. $f(x, y) = x \ln(y), dy$

2. $f(r, \theta) = 3r + 2\theta, dr$

3. $g(x, y, z) = x + y, dz$

4. $h(x, y, z, w) = e^{x+w} - \frac{1}{w}, dw$

5. $m(x, y) = \frac{1}{1+x^2+y^2}, dy$

6. $N(x, y) = x \sin(xy), dy$

7. $N(x, y) = x \sin(xy), dx$

8. $\gamma(\sigma, \tau) = \frac{1}{\sqrt{\sigma^2+\tau^2}}, d\tau$

9. $\varphi(x, y, z) = xyz\sqrt{4-x^2-y^2}, dx$

10. $q(\rho, \varphi, \theta) = \rho^2 \sin^2 \varphi, d\varphi$

11. $\omega(x, y) = \frac{1}{1-xy}, dy$