

Math 223 Integration Review

1.  $\int \sin(3\theta) \cos^2(3\theta) d\theta$

2.  $\int 4^{3t} dt$

3.  $\int \sqrt{x}(1+\sqrt{x}) dx$

4.  $\int \frac{x^4 + x + 1}{x^3} dx$

5.  $\int \frac{1}{e^m} dm$

6.  $\int (e^t + 1)^2 dt$

7.  $\int \frac{dx}{x^2 + 6x + 9}$

8.  $\int \frac{dt}{\cos^2 t}$

9.  $\int w^2 \cos(w^3) dw$

10.  $\int \frac{\sec \alpha \tan \alpha}{3 - \sec \alpha} d\alpha$

11.  $\int \frac{x}{1+x} dx$

12.  $\int \frac{1}{\sqrt{1-x^2}} dx$

13.  $\int \sqrt[3]{4v+7} dv$

14.  $\int \frac{3}{1+2t} dt$

15.  $\int \frac{1}{y(\ln y)^3} dy$

16.  $\int \frac{e^x}{1+e^{2x}} dx$

17.  $\int \tan\left(\frac{\pi}{4}\right) dx$

18.  $\int (\cos^2 \alpha + \sin^2 \alpha) d\alpha$