

WEEK 5 AND 6: QUESTIONS TAKEN FROM PAST MIDTERMS AND FINALS

$$(1) \int e^{-\sqrt{x}} dx$$

$$(2) \int \cos^3 \theta d\theta$$

$$(3) \int \frac{dt}{t\sqrt{4t^2-1}}$$

$$(4) \int_{-2}^2 \frac{1}{\sqrt{x^2+4x+8}} dx$$

$$(5) \int 2x \ln(x+5) dx$$

$$(6) \int \sec(x) \tan^3(x) dx$$

$$(7) \int x^3 \sqrt{9+4x^2} dx$$

$$(8) \int_0^{\pi/6} (\sin(2x))(\cos(2x)) dx$$

$$(9) \int \frac{\sin x}{\cos^2 x - 5 \cos x + 6} dx$$

$$(10) \int \frac{t^3}{\sqrt{t^2+4}} dx$$

$$(11) \int_{\pi/4}^{\pi/3} \frac{\ln(\tan \theta)}{\sin \theta \cos \theta} d\theta$$

$$(12) \int x^3 \sin(x^2+1) dx$$

$$(13) \int \ln(1+\sqrt{x}) dx$$

$$(14) \int \frac{\sqrt{y-4}}{y} dy$$

$$(15) \int_0^1 \frac{x^2}{\sqrt{4-x^2}} dx$$

$$(16) \int \frac{x}{\sqrt{6x-x^2}} dx$$