

## Homework #8 Final Answers

### Section 7.3

$$3. \quad 2 \left[ \frac{\sqrt{x^2-4}}{2} - \operatorname{arcsec} \left( \frac{x}{2} \right) \right] + C \quad \overset{\text{or}}{=} \quad \sqrt{x^2-4} - 2 \operatorname{arcsec} \left( \frac{x}{2} \right) + C$$

$$13. \quad \frac{1}{6} \left[ \operatorname{arcsec} \left( \frac{x}{3} \right) - \frac{3\sqrt{x^2-9}}{x^2} \right] + C$$

### Section 7.4

$$9. \quad \frac{1}{2} \ln|2x+1| + 2 \ln|x-1| + C$$

$$12. \quad \ln 3 - \ln 8 \quad \overset{\text{or}}{=} \quad \ln \left( \frac{3}{8} \right) \quad \overset{\text{or}}{=} \quad -\ln \left( \frac{8}{3} \right)$$

### Section 7.5

$$11. \quad \frac{1}{2} \left[ \operatorname{arcsec} x + \frac{\sqrt{x^2-1}}{x^2} \right] + C$$

$$21. \quad x \arctan \sqrt{x} - \sqrt{x} + \arctan \sqrt{x} + C$$

$$33. \quad 2 \left[ \arcsin \left( \frac{x+1}{2} \right) + \frac{(x+1)\sqrt{4-(x+1)^2}}{4} \right] + C$$

$\sqrt{3-2x-x^2}$  original

or distribute...

$$55. \quad 2 \left[ \ln \sqrt{x} - \ln(\sqrt{x}+1) \right] + C \quad \overset{\text{or}}{=} \quad 2 \ln \left( \frac{\sqrt{x}}{\sqrt{x}+1} \right) + C \quad \overset{\text{or}}{=} \quad \ln \left( \frac{x}{(\sqrt{x}+1)^2} \right) + C$$

$$\overset{\text{or}}{=} \quad 2 \ln \sqrt{x} - 2 \ln(\sqrt{x}+1) = \ln x - 2 \ln(\sqrt{x}+1)$$

Plus Q:  $\int_{-1}^1 \frac{1}{x^2+4x+7} dx = \frac{\pi}{6\sqrt{3}}$

Plus Q:  $\int \frac{1}{\sqrt{4-4x-x^2}} dx = \arcsin\left(\frac{x+2}{\sqrt{8}}\right) + C$