

Homework 9 Final Answers

Section 7.4

$$22. \frac{x^3}{3} + \frac{1}{2} \ln|x^2+9| + \frac{2}{3} \arctan\left(\frac{x}{3}\right) + C$$

$$23. \ln|x-1| - \frac{1}{2} \ln|x^2+9| - \frac{1}{3} \arctan\left(\frac{x}{3}\right) + C$$

$$29. \frac{1}{2} \ln|(x+1)^2+4| + \frac{3}{2} \arctan\left(\frac{x+1}{2}\right) + C$$

$$32. \frac{1}{2} \ln\left(\frac{18}{13}\right) - \frac{\pi}{6} + \frac{2}{3} \arctan\left(\frac{2}{3}\right)$$

unknown value, but it's finite

$$39. 2 \arctan \sqrt{x-1} + C$$

Section 7.5

$$42. -\frac{\tan^{-1}x}{x} + \ln|x| - \frac{1}{2} \ln|x^2+1| + C$$

$$72. -\frac{\ln(x+1)}{x} + \ln|x| - \ln|x+1| + C$$

$$\text{Plus Q: } \int \frac{x^4 - 6x^3 - 34x - 3}{(x-7)(x^2+2)} dx = \frac{x^2}{2} + x + 2 \ln|x-7| + \frac{3}{2} \ln|x^2+2| - \frac{1}{\sqrt{2}} \arctan\left(\frac{x}{\sqrt{2}}\right) + C$$

$$\text{Plus Q: } \int_{\ln 2}^{\ln 5} \frac{2e^x}{e^{2x}-1} dx = \ln 2$$