

Problems for Chapter 7

1. Simplify $\frac{4x^2-3x+1}{x+2}$
2. $\int \sin^3(x)\cos^2(x) dx$
3. $\int \frac{\sin^2(x)}{1+\cos(x)} dx$
4. $\int \frac{1+\cos(x)}{\sin^2(x)} dx$
5. $\int x\cos(2x) dx$
6. $\int \frac{x^2}{\sqrt{4-x^2}} dx$ using $x = 2\sin(\theta)$.
7. $\int \frac{x+1}{x(x^2+1)} dx$
8. $\lim_{x \rightarrow 1} \frac{\ln(x)}{x^2-1}$
9. $\int_1^{\infty} \frac{1}{\sqrt{x}} dx$
10. $\int_0^1 \frac{1}{\sqrt{x}} dx$