

Name _____

- No calculators are allowed.

1. (3 points) Evaluate the following indefinite integrals.

(a) $\int x^r dx$ (for $r \neq -1$)

(b) $\int \frac{1}{x} dx$

(c) $\int \cos x dx$

(d) $\int \sin x dx$

(e) $\int \sec^2 x dx$

(f) $\int \csc^2 x dx$

(g) $\int \sec x \tan x dx$

(h) $\int \csc x \cot x dx$

(i) $\int e^x dx$

(j) $\int \frac{1}{1+x^2} dx$

(k) $\int \frac{1}{\sqrt{1-x^2}} dx$

(l) $\int \frac{1}{x\sqrt{x^2-1}} dx$

2. (7 points) Evaluate the following integrals.

(a) $\int (\sqrt[3]{x} + 7) dx.$

(b) $\int \cos^5(x) \sin^3(x) dx.$

(c) $\int \frac{2x}{\sqrt{3x^2 + 10}} dx$

$$(d) \int \frac{3}{4+x^2} dx$$

$$(e) \int \frac{e^x}{1+e^{2x}} dx$$

$$(f) \int_0^1 x^2 (x^3 + 1)^4 dx$$

$$(g) \int_{\pi/4}^{\pi/3} \sec^2 x \tan^2 x dx$$