

This is a Take-Home Quiz. You may use your book and course notes, and you may consult with other members of the class, but you may not consult with outside tutors (at least not on these specific problems). You may use the back of this paper if you run out of room on the front.

1. (1 point each) Find each of the following:

(a) $\int \pi \, dx$

(b) $\int 4x^5 \, dx$

(c) $\int \sqrt{x} + 4x^4 \, dx$

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

(e) $\int \frac{3}{x} \, dx$

(f) $\int \frac{x^4 - 3x}{x^3} \, dx$

(g) Find $f(x)$ if $f'(x) = 3x^2 - 4x + 6$, and $(1, 2)$ is on the graph of $f(x)$.

(h) Find $f(x)$ if $f'(x) = 2x^5 - 4e^{2x}$, and $(0, 2)$ is on the graph of $f(x)$.

(i) $\int_0^3 2x^2 \, dx$

(j) $\int_1^4 \frac{1}{x} - \frac{1}{x^2} \, dx$