

1. Find the general anti-derivative $F(x)$ to the following functions

(a) $f(x) = -8 + \sqrt{x} - \frac{7}{x^5}$ $F(x) =$ _____

(b) $f(\theta) = 3 \csc^2(\theta) - 4 \sec(\theta) \tan(\theta)$ $F(\theta) =$ _____

2. Evaluate the definite integral.

(a) $\int_{-2}^3 x^3 - 3x + 7 dx$ $=$ _____

3. Evaluate the following integrals using u -substitution.

(a) $\int \cos(x) \sec^2(\sin x) dx$ = _____

4. Evaluate the following integrals.

(a) $\int_2^3 3x\sqrt{x^2 - 4} d\theta$ = _____