

Group: _____

Name: _____

ma138 Worksheet 2, Aug 29th, 2017

Evaluate the following integrals using U -substitution.

1. $\int x \sqrt{3x+4} \, dx$

2. $\int_1^2 \frac{4x^3 + 2x}{x^4 + x^2} \, dx$

3. $\int \tan x \, dx$. (Hint: Use the fact that $\tan x = \frac{\sin x}{\cos x}$).

4. Assume that $g(2) = -1$ and $g(7) = 0$, and that $g(x) + 1$ is never negative. Evaluate

$$\int_2^7 g(x) g'(x) \sqrt{g(x) + 1} dx$$

.

5.
$$\int_{\ln 4}^{\ln 7} \frac{e^x}{(e^x - 3)^2} dx$$

6.
$$\int_1^2 x^5 \sqrt{x^3 + 5} dx$$