# Quiz 5

Choose one of the following problems:

**1.** Show that
$$\int \sec x \, dx = \ln|\sec x + \tan x| + C.$$

*Hints*: Use the identity $\sec x = \frac{\sin x}{\cos x} + \frac{\cos x}{1+\sin x}$.

**2.** Find
$$\int \frac{1}{\sqrt{x^2 + 2x + 8}} \, dx.$$

*Hints*: Follow these setps:

(i) Complete the square.

(ii) Make a substitution to put the integrand in the form $\int \frac{1}{\sqrt{u^2+a^2}} \, du$.

(iii) Make the substitution $u = a \tan \theta$ to get rid of the radical.