

Name:

Quiz #7 - Makeup, due Friday 3/2/07

1.

$$\int_{\sqrt{3}}^2 \frac{\sqrt{x^2 - 3}}{x} dx.$$

2.

$$\int \frac{x + 5}{x^2 + 2x + 10}$$

3. Copy the following in your own handwriting:

The square root function $\sqrt{\quad}$ is not a linear function. This means, in particular, that $\sqrt{a+b} \neq \sqrt{a} + \sqrt{b}$. For example suppose $a = 9$ and $b = 16$. Notice that $\sqrt{a} + \sqrt{b} = 3 + 4 = 7$ and $\sqrt{a+b} = \sqrt{25} = 5$ so they are not equal.

I promise not to be tempted to assume $\sqrt{\quad}$ is linear, even if there are things squared underneath the square root. For example I know that

$$\sqrt{a^2 + b^2} \neq a + b.$$

This is because when I square $a + b$ I do not get $a^2 + b^2$, i.e.

$$(a + b)^2 = a^2 + 2ab + b^2$$

which is not $a^2 + b^2$.

I also know that $\sqrt{4 - \cos^2(x)} \neq 2 - \cos(x)$.