

Mathematics 122

Quiz #31

Name: key

You must show your work to get full credit.

Compute the following

1.4 (1) $\int (x^3 + 4x - 9) dx$

$$\frac{x^4}{4} + 2x^2 - 9x$$

1.4 (2) $\int 4\sqrt{t} dt = \int 4t^{\frac{1}{2}} dt$
 $= 4(\frac{2}{3}) t^{\frac{3}{2}}$

$$\frac{8}{3} t^{\frac{3}{2}}$$

1.4 (3) $\int \frac{5}{u^3} du = \int 5u^{-3} du$
 $= 5 \frac{1}{-2} u^{-2}$

$$-\frac{5}{2} u^{-2} = \frac{-5}{2u^2}$$

1.4 (4) $\int 9e^{-3x} dx = \frac{9}{-3} e^{-3x} = -3e^{-3x}$

$$-3e^{-3x}$$

1.4 (5) $\int \frac{4}{z} dz$

$$4 \ln(z)$$