

Mathematics 122

Quiz 31

Name: Key

You must show your work to get full credit.

Compute the following antiderivatives. Do not forget the constant of integration (that is the $+C$).

1. $\int 4x \, dx = \underline{\frac{4x^2}{2} + C = 2x^2 + C}$

2. $\int (12t^5 - 6t^2 + 13) \, dt = \underline{2t^6 - 2t^3 + 13t + C}$
 $C = \underline{\frac{12}{6}t^6 - \frac{6}{3}t^3 + 13t + C}$

3. $\int 4\sqrt{u} \, du = \underline{\frac{8}{3}u^{3/2} + C}$
 $C = \underline{\int 4u^{1/2} \, du = 4(\frac{2}{3})u^{3/2} + C}$

4. $\int 4e^z \, dz = \underline{4e^z + C}$

5. $\int 2e^{3x} \, dx = \underline{\frac{2}{3}e^{3x} + C}$