MAT122
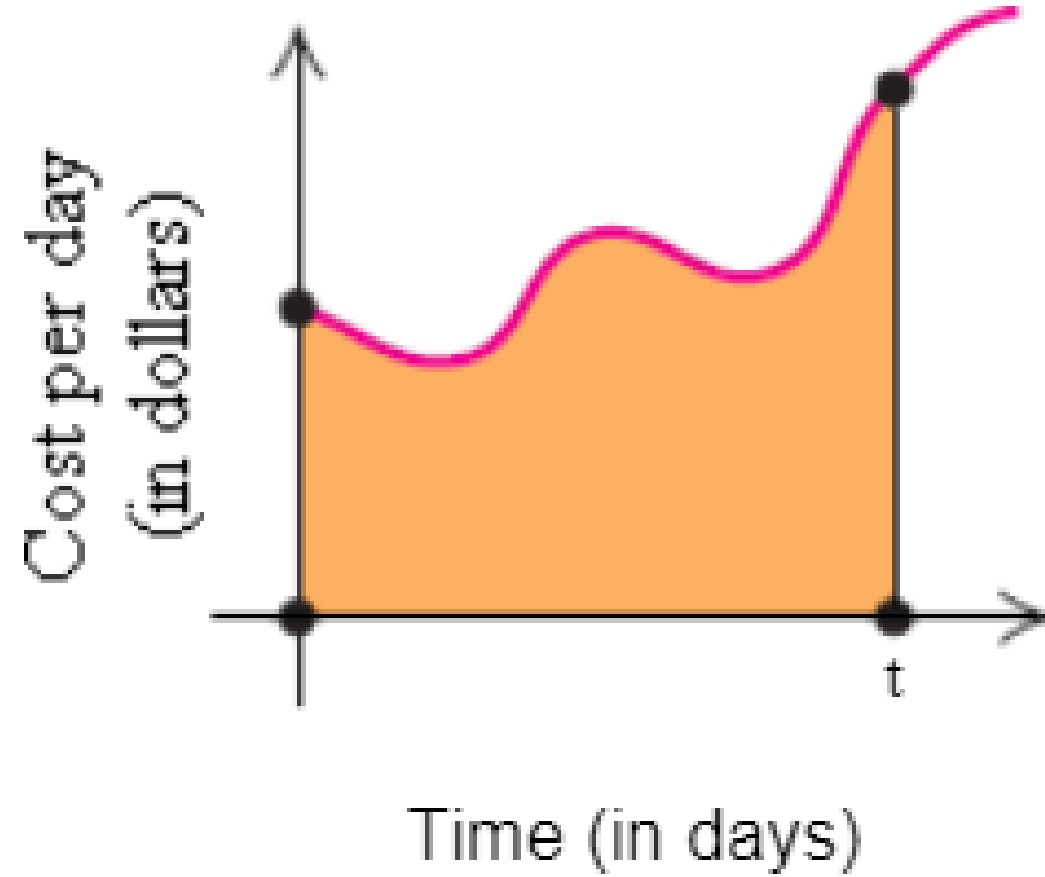
Indefinite Integrals

32a

Integration Interpretation

Indefinite Integral Notation

An **integral**, or anti-derivative, represents the <u>area under a curve</u>.

Indefinite Integral

$$\int f(x)\, dx$$

if $f(x) = x^n$

then $\int f(x)dx = \dfrac{x^{n+1}}{n+1} + C$

ex. $\int \left(4x^2 - 3x + 7\right) dx$

$= \boxed{\dfrac{4}{3}x^3 - \dfrac{3}{2}x^2 + 7x + C}$

ex. $\int e^x dx$

$= \boxed{e^x + C}$

ex. $\int \dfrac{1}{2\sqrt{x}} dx$

$= \boxed{\sqrt{x} + C}$