

2014 ABC Calculus AB

calculator

① $0 \leq t \leq 30$

$A(t) = 6.687(.93)^t$ amount of clippings

a) average rate of change $\frac{A(30) - A(0)}{30 - 0} = \frac{.782927 - 6.687}{30}$
 $\frac{1}{30-0} \int_0^{30} A'(t) dt = \frac{1}{30} (A(30) - A(0))$
 $= \boxed{-.197 \text{ pounds per day}}$

b) $A'(15) = \boxed{-.164 \text{ lbs/day}^2}$

The rate at which the clippings are decomposing is .164 lbs per day on day 15.

c) $A(t) = \frac{1}{30} \int_0^{30} A(t) = \boxed{2.753}$

solve $A(t) = 2.753 \rightarrow \boxed{t = 12.413}$

d) $t=30$ $A(30) = .78293$ $(30, .78293)$

$A'(30) = -.05598$

$L(t) = \boxed{.4 - .783 = -.056(t - 30)}$

$L(y) = \boxed{.5 - .783 = -.056(t - 30)}$

$\boxed{t = 35.054}$ days

AB/BC