Elementary Math Models
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Spring 1998 **QUIZ 3** Name _____

The following formulas might be useful on this quiz.

$a_{n+1} = a_n + d$	$a_{n+1} = a_n + d + en$	$a_{n+1} = ra_n$
$a_n = a_0 + dn$	$a_n = a_0 + dn + e\left(\frac{(n-1)n}{2}\right)$	$a_n = a_0 r^n$
$x = -b/2a$	$\frac{-b \pm \sqrt{b^2-4ac}}{2a}$	$a(t) = a_0 r^{t/d}$
$b = e^{\ln b}$	$b = 10^{\log b}$	$b^x = c$ if $x = \frac{\log c}{\log b} = \frac{\ln c}{\ln b}$

1. It is a fact that $4 = 8^{2/3}$. Use this fact to express the equation $y = 2500(4)^{2t}$ in a form involving an exponential function with base 8. (The base is the number that has the exponent. So the original equation has a base of 4.)

(OVER)

2. A geometric growth model for a radioactive element has the equation $P = 5000(.5)^{t/28.1}$. Express this equation in another form so that the exponential function has 10 as the base.