

$$1.5 = b^{12} \quad \text{solve for } b$$

$$(1.5)^{1/12} = (b^{12})^{1/12} = b$$

$$b = (1.5)^{1/12}$$

$$\Rightarrow g(t) = 100 (1.5^{1/12})^t$$

$$\boxed{g(t) = 100 (1.5^{t/12})}$$

This is the same "Alternate Formula" found in the solutions of part 2 of Special Assignment #

Note $e^k = b \Rightarrow 1.5^{1/12} = e^k$

$$\ln(1.5^{1/12}) = k \Rightarrow k = \frac{\ln 1.5}{12}$$

same k as in other method

at $t=70$ (year 2010)

$$g(70) = 100 \cdot (1.5^{70/12})$$

$$= \boxed{196.556 \text{ billion}}$$