Homework #1 Solution

Compounding	Formula	Value of t	Future Value	Doubling Time
Annually	$F_1(t) = 50000\,(1+0.05)^t$	$t = 1$	52500 dollars	15 years
Semiannually	$F_2(t) = 50000\left(1+\frac{0.05}{2}\right)^{2t}$	$t = 1.5$	$\approx$ 53844.53 dollars	14 years and 6 months
Quarterly	$F_4(t) = 50000\left(1+\frac{0.05}{4}\right)^{4t}$	$t = 1.75$	$\approx$ 54542.53 dollars	14 years
Monthly	$F_{12}(t) = 50000\left(1+\frac{0.05}{12}\right)^{12t}$	$t = 23/12$	$\approx$ 55017.83 dollars	13 years and 11 months
Continuously	$F_\infty(t) = 50000e^{0.05t}$	$t = 23/12$	$\approx$ 55028.78 dollars	$\approx$ 13.863 years