MTH 162
Quiz 6
Spring 2011

Show all work in a neat and organized fashion. Clearly indicate your answers.
10 points possible.

$I = Prt, \qquad S = P + I$

$a_n = a_1 + (n-1)d, \qquad s_n = \dfrac{n}{2}(a_1 + a_n)$

$n = mt, \qquad i = \dfrac{r}{m}, \qquad S = P(1+i)^n = P\left(1 + \dfrac{r}{m}\right)^{mt}, \qquad S = Pe^{rt}$

$\text{APY} = \left(1 + \dfrac{r}{m}\right)^m - 1 = (1+i)^m - 1, \qquad \text{APY} = e^r - 1$

$a_n = a_1 r^{n-1}, \qquad s_n = \dfrac{a_1(1-r^n)}{1-r}$

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1. (2 pts.) Find the 78th term of the arithmetic sequence with first term 9 and common difference $-\frac{1}{4}$.

2. (3 pts.) Find the sum of the first 96 terms of the arithmetic sequence with first term 3 and common difference $\frac{1}{2}$.

3. (2 pts.) What is the future value if \$5200 is invested for 15 years at 8% compounded quarterly?

4. (3 pts.) What lump sum needs to be deposited in an account earning 4%, compounded monthly, so that it will grow to \$120,000 in 18 years?