

F & T
Geometric Series HW

Name _____

1.) Find the **sum** of the first 12 terms of the sequence: 7 , 14 , 28 , ...

2.) A 7-year lease for office space states that the annual rent is \$85,000 for the first year and will increase by 6% each additional year of the lease. What will the **total** rent expense be for the entire 7-year lease?

3.) Dan earns \$35,000 in his first year of teaching and earns 5% increase in each successive year.

a. Write a geometric series formula, S_n , for Dan's total earnings over n years.

b. Use this formula to find Dan's **total** earnings for his first 10 years of teaching, *to the nearest cent*.

4.) Kristen wants to increase her running endurance. According to experts, a gradual mileage increase of 10% per week can reduce the risk of injury. If Kristin runs 8 miles in week one, which expression can help her find the **total** number of miles she will have run over the course of her 6-week training program?

(a) $\sum_{n=1}^6 8(1.10)^{n-1}$ (b) $\sum_{n=1}^6 8(1.10)^n$ (c) $\frac{8 - 8(1.10)^6}{0.90}$ (d) $\frac{8 - 8(0.10)^6}{1.10}$