## ReviewSol

October-08-13 2:10 PM

(1)  $x^{6} + 6(x)^{5}(-4) + 15(x)^{4}(-4)^{2} + 20(x)^{3}(-4)^{3}$ +15(x)2(-4)4+6(x)(-4)5+ (-4)6  $= x^6 - 24x^5 + 240x^4 - 1280x^3 + 3840x^2$ 

$$\underbrace{1}_{\left(x-\frac{1}{2}\right)^{\frac{1}{2}}}$$

- (2)How long will it take \$4,000 to grow to \$9,000 if it is invested at 7% compounded monthly?
- 3 Recently, Guaranty Income Life offered an annuity that pays 6.65% compounded monthly. If \$500 is deposited into this annuity every month, how much is in the account after 10 years? How much of this is interest?
- loan of \$4,000 was repaid at the end of 10 months with a check for \$4,270. What annual rate of interest was charged?
- Sharon has found the perfect car for her family (anew mini-van) at a price of \$24,500. She will receive a \$3500 credit toward the purchase by trading in her old Gremlin, and will finance the balance at an annual rate of 4.8% compounded
  - a) How much are her payments if she pays monthly for 5 years?
  - b) How much interest did she
- (6.) For the geometric sequence with  $t_1 = 6$ and  $z_5 - \frac{3}{}$

determine

- a. the general term (explicit) formula for tn (use fractions)
- the sum of first seven terms (use fractions)
- An auditorium contains 10 seats in the first row, 12 seats in the
  - second, 14 in the third, and so on. a. How many seats are in the back row if there are 50 rows in the auditorium?
  - b. How many total seats are in the auditorium?
  - c. What is the recursive formula for the number of seats in row n?

(%) Find the first six terms of a sequence defined by

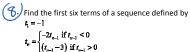
- (2)  $A = P(1+i)^n$  $q_{000} = q_{000} \left( 1 + 0.07 \right)^n$  $2.25 = (1.0058\overline{3})^{n}$   $\log_{1.0058\overline{3}} (2.25) = n$  139.42 = 12t  $11.6ya^{-\frac{1}{2}}$ 
  - (3) FV= R[(Iti)"-1 FV= 500 [(H0,045)2-1] (0.045) 12 FV=\$84 895, 40 Subtract
    0.7 = € I = 24 895.40

-6144x + 4096

- A=P+Prt 4270= 4000 + 4000 (r)(10) 270 = 3333.3r 0.081=r ~ 8.1%
- 6.) PV= R[1-(Hi)-"] 21000 = R[1-(1+0.048)-60]  $\frac{\left(0.04\%\right)}{21000 = R\left(53.248f...\right)}$ (a) \$394,37 R 6) t=FV-PV = 394,37×60 - 21000 = \$2662,20
- tn=a+d(n-1) @ t50 = 10+2(49) = 108 seats (b)  $\int_{50} = \frac{50}{2} \left[ 2(10) + 2(49) \right]$ = 2950 seats in total
- (c)  $t_{n} = (t_{n-1}) + 2, t_1 = 10$

Discrete Page 1

- - t2 = -2(-1) = 2 use 1st piece since t, was reg



$$t_2 = -2(-1) = 2$$
 use 1st piece since  $t_1$  was reg
$$t_3 = 2 - 3 = -1$$
 use  $2^{nd}$  piece

( N Record in Sigma notation:

(a) 
$$\sqrt{3} + 2\sqrt{5} + 3\sqrt{7} + 4\sqrt{9} + 5\sqrt{11} + \dots$$

$$571-253+1=319$$
 tems all together all of them  $\frac{1}{3}$  in value : total =  $319(\frac{1}{3})$ 

there are so many terms
$$\therefore \int_{n=1}^{\infty} N\sqrt{2n+1}$$

That the explicit equation of the following pattern.							
8	16	0	-64	-200	-432	-784	3
$+8 - 16 - 64 = 136 = -232$ $-24 - 48 = -72 = -96$ $-24 = -24 = -24 = -24 = -24$ $t_n = an + bn^2 + cn + c$							

 $\int d^3t dt = -4n^3 + 12n^2$ 

(2) Evaluate the sum in terms of n
$$\sum_{i=1}^{n} (3+2i)^{2} = \sum_{i=1}^{n} 9+12i+4i^{2} = \sum_{i=1}^{n} 9+12\sum_{i=1}^{n} i+4\sum_{i=1}^{n} i^{2}$$

$$= 9n + 12\left[\frac{n^{2}+n}{2}\right] + \frac{1}{2}\left[\frac{2n^{3}+3n^{2}+n}{63}\right]$$

$$= 9n + 6n^{2} + 6n + \frac{14}{3}n^{3} + 2n^{2} + \frac{2}{3}n$$

(3) 
$$A = Pe^{rt}$$
  
 $80000 = 35000 e^{0.06t}$   
 $3.2 = e^{0.06t}$   
 $l_n(3.2) = 0.06t$   
 $|9.4y_{15}| = t$