Review

Pg. 66-68

#3, 4a, 5. 7, 8, 11

13, 17, 19, 20, 21

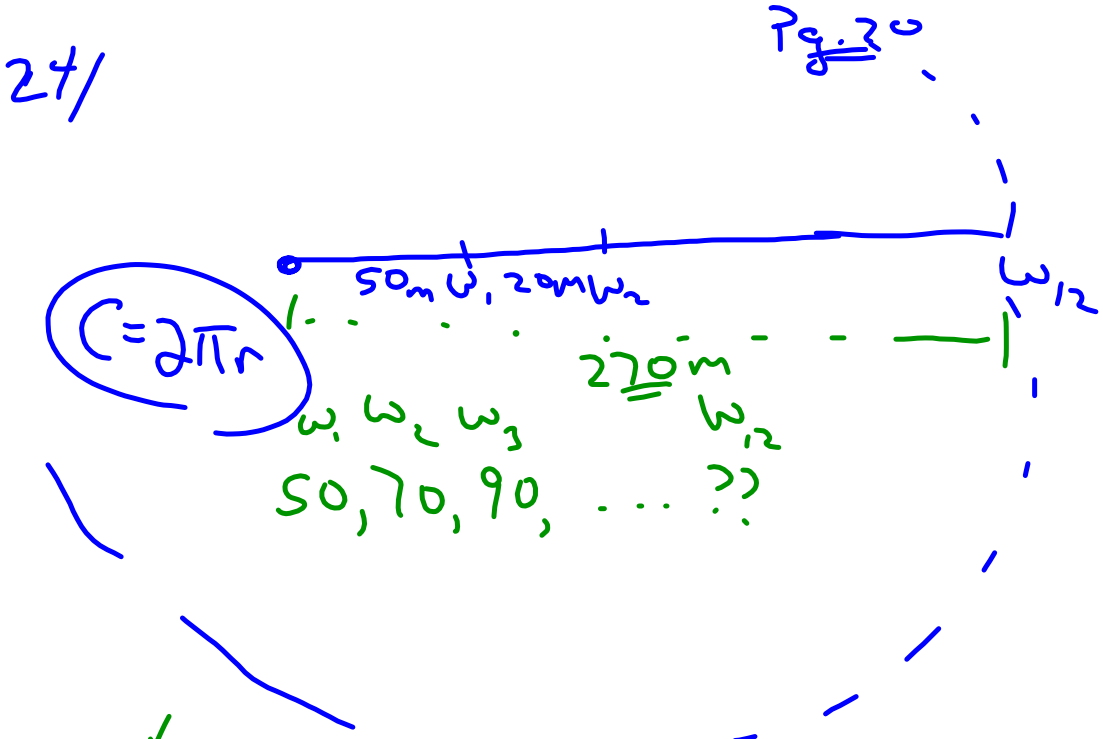
Pg. 69

Practice Test

#1, 2, 3, 4, 5, 6, 8

Test: Thursday

24/



$t_n = 50 + (n-1)(20)$

$t_{12} = 50 + 11(20)$

$t_{12} = 270\,m$

$C = 2\pi(270)$

$C = 540\pi\,m$

Pg. 54

#5/ Geometric

a) $S_n = 33,\ t_n = 48,\ r = -2$

$\frac{a(r^n - 1)}{r - 1} = 33$

$ar^{n-1} = 48$

$a(-2)^{n-1} = 48$

x^{a-b}

$\frac{x^a}{x^b}$

$(-3)\ \frac{a((-2)^n - 1)}{-3} = 33(-3)$

$a((-2)^n - 1) = -99$

$\frac{a(-2)^n}{(-2)^1} = 48$

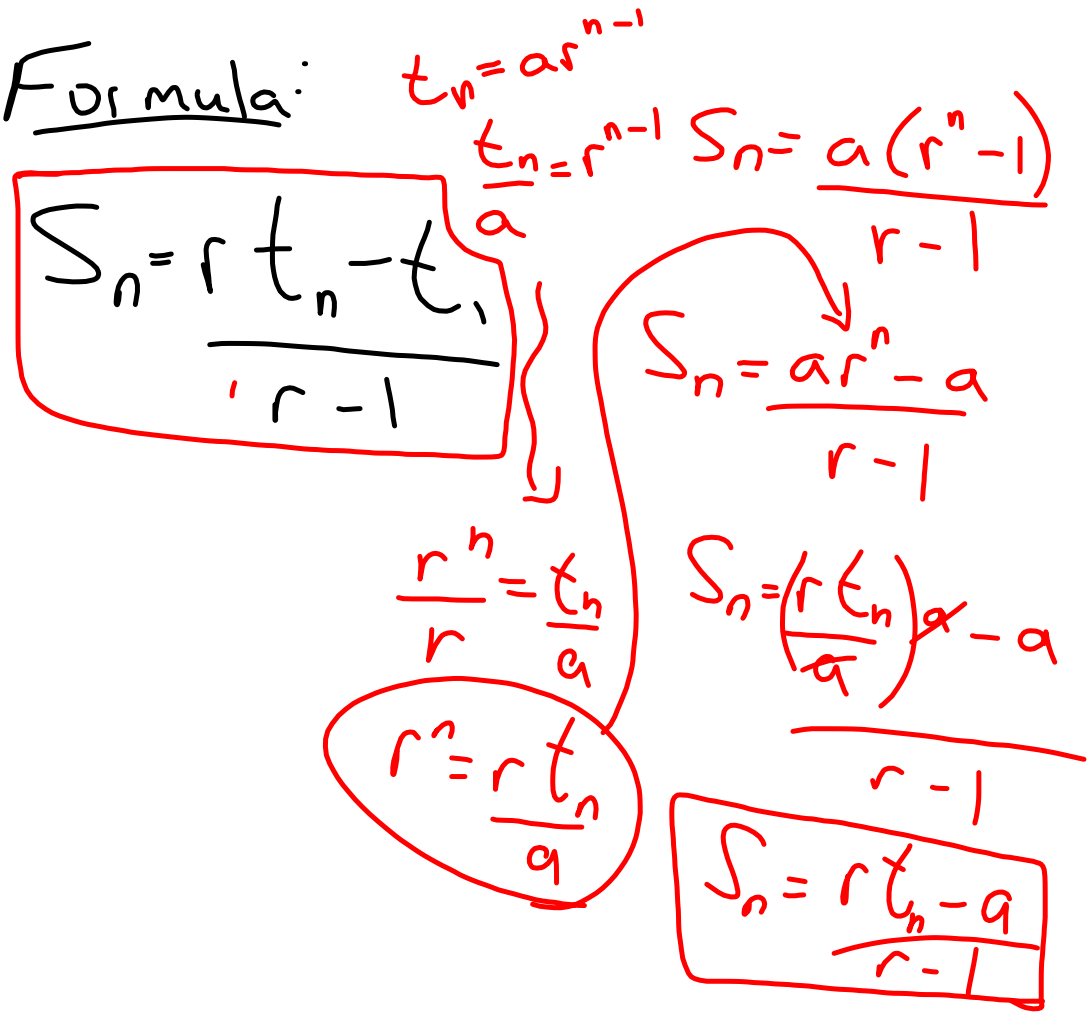
$a(-2)^n = -96$

$(-2)^n = -96$ /a

$a\left(\frac{-96}{a} - 1\right) = -99$

$-96 - a = -99$

$3 = a$


Formula:
$t_n = ar^{n-1}$
$t_n = r^{n-1}$
$S_n = \frac{a(r^n - 1)}{r - 1}$
$S_n = \frac{rt_n - t_1}{r - 1}$
a
$S_n = \frac{ar^n - a}{r - 1}$
$\frac{r^n}{r} = \frac{t_n}{a}$
$S_n = \frac{(rt_n)}{a} - a$
$r^n = \frac{rt_n}{a}$
$r - 1$
$S_n = \frac{rt_n - a}{r - 1}$

Pg. 54

#7 $r = \frac{1}{3}$, $S_5 = 121$ } $t_1 = ??$

$$\frac{a\left(\left(\frac{1}{3}\right)^5 - 1\right)}{\frac{1}{3} - \frac{1}{1}} = 121$$

$$\left(-\frac{3}{2}\right)\frac{a\left(\frac{1}{243} - \frac{1}{1}\right)}{-\frac{2}{3}} = 121\left(-\frac{2}{3}\right)$$

$$\left(\frac{243}{242}\right)a\left(-\frac{242}{243}\right) = -\frac{242}{3}\left(\frac{-243}{242}\right)$$

$a = 81$ $r = \frac{1}{3}$

(a)

(b) 81, 27, 9, 3, 1

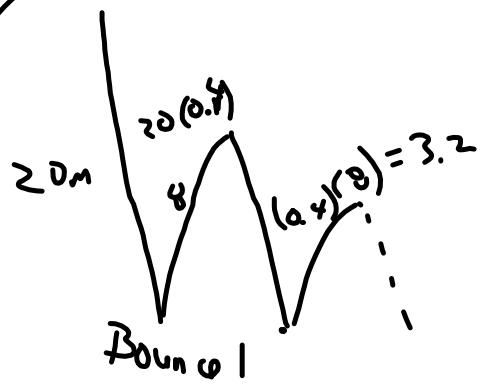
Pg. 54

20, 8, 3.2, ...

×0.4 ×0.4

#10/

$r = 0.4$



$t_6 = 20(0.4)^5$

$= 0.2048$ m

$t_4 = 3.2(0.4)$

$= 1.28$

$t_5 = 1.28(0.4)$

$= 0.512$

20, 8, 3.2, 1.28, 0.512, 0.2048

$20 + 8(2) + 3.2(2) + 1.28(2) + 0.512(2) + 0.2048(2)$

=

$$S_6 = \left(\frac{20(0.4^5 - 1)}{0.4 - 1}\right)(2) - 20$$

16. $3^1 + 3^2 + 3^3 + \cdots + 3^n = 9840$

$a = 3$, $r = 3$, $S_n = 9840$

$$S_n = \frac{a(r^n - 1)}{r - 1}$$

$$9840 = \frac{3(3^n - 1)}{3 - 1}$$

$$\frac{9840(2)}{3} = 3^n - 1$$

$$3^n = 6561$$

$$\log 3^n = \log 6561$$

$$n = \frac{\log 6561}{\log 3}$$

$n = 8$

Pg. 64

#11) $5 + 5x + 5x^2 + 5x^3 + \cdots$

a) $\cdot x$ $\cdot x$

BBP $|x| < 1$

$x \geq 0$ or BBN $x < 0$

$x < 1$ $\quad -x < 1$

$x > -1$

$-1 < x < 1$

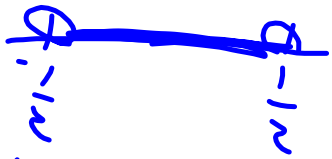
c) $2 + 4x + 8x^2 + 16x^3 + \cdots$

$r = 2x$

$|2x| < 1$

$2x < 1$ $\quad -2x < 1$

$x < \frac{1}{2}$ $\quad x > -\frac{1}{2}$



$\left(-\frac{1}{2}, \frac{1}{2}\right)$

$-\frac{1}{2} < x < \frac{1}{2}$

$\left(-\frac{1}{2}, \frac{1}{2}\right)$

$-\frac{1}{2} \leq x < \frac{1}{2}$

Pg. 27

7) a) $4+8+12+\cdots+996$

$996 = 4+(n-1)(4)$

$\frac{992}{4} = n-1$

$n = \frac{992}{4}+1 = 248+1$

$= 249$

$S_{249} = \frac{249}{2}[2(4)+(248)(4)]$

$=$ _____

b) $12+18+24+\cdots+996$

$996 = 12+(n-1)(6)$

$\frac{996-12}{6} = n-1$

$\frac{984}{6}+1 = n$

$164+1 = n$

$165 = n$

$S_{165} = \frac{165}{2}[2(12)+(164)(6)]$

$=$ . . .