

Unit 4: Ch 8 Review Assignment

- 1) 8, 5, 4, 3.5, 3.2 2) $\frac{-1}{1}, \frac{1}{3}, \frac{-1}{5}, \frac{1}{7}, \frac{-1}{9}$
- 3) 72, 36, 12, 3, $\frac{3}{5}$ 4) 0, 2, 4, 12, 20
- 5) 30 6) 56 7) $\frac{205}{24}$ 8) $\frac{15551}{2520}$ 9) 6050
- 10) 35 11) 418 12) $\frac{10}{11}$ 13) $\sum_{n=1}^{20} \frac{1}{2n}$
- 14) $\sum_{n=1}^9 2n^2$ 15) $\sum_{n=1}^9 \frac{n}{n+1}$ 16) $\sum_{n=1}^{\infty} \left(\frac{-1}{3}\right)^{n-1}$
- 17) a) $.5 + .05 + .005 + .0005 = .5555$
b) $5/9$
- 18) a) $.8 + .08 + .008 + .0008 = .8888$
b) $8/9$
- 19) a) $.02 + .0002 + .000002 + .00000002$
 $.02020202$
b) $2/99$
- 20) a) $.7 + .07 + .007 + .0007 = .7777$
b) $7/9$
- 21) yes, $d = -2$ 22) NO 23) yes, $d = \frac{1}{2}$
- 24) yes, $d = -\frac{1}{9}$ 25) 3, 7, 11, 15, 19
- 26) 8, 6, 4, 2, 0 27) $d = \frac{28-10}{10-4} = 3$

$$28) d = \frac{22-14}{6-2} = 2$$

12, 14, 16, 18, 20

$$29) 35, 32, 29, 26, 23$$

$$d = -3$$

$$30) 15, 17.5, 20, 22.5, 25$$

$$d = 2.5$$

$$31) 9, 16, 23, 30, 37$$

$$d = 7$$

$$32) 100, 95, 90, 85, 80$$

$$d = -5$$

$$33) \text{yes}, r = 2$$

$$34) \text{yes}, r = -\frac{1}{3}$$

$$35) \text{yes}, r = -2$$

$$36) \text{No}$$

$$37) 4, -1, \frac{1}{4}, \frac{1}{16}, \frac{1}{64}$$

$$38) 2, 4, 8, 16, 32$$

$$39) 4 = ar^2$$

$$r = \frac{2}{3}$$

$$9, 6, 4, \frac{8}{3}, \frac{16}{9}$$

$$40) 12 = 2r^2$$

$$r = \sqrt{6}$$

$$2, 2\sqrt{6}, 12, 12\sqrt{6}, 72$$

$$41) 120, 40, \frac{40}{3}, \frac{40}{9}, \frac{40}{27}$$

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

$$42) 200, 20, 2, .2, .02$$

$$r = .1$$

$$43) 25, -15, 9, -5.4, 3.24$$

$$r = -\frac{3}{5} \text{ or } -.6$$

$$44) 18, 30, 50, 83\frac{1}{3}, \frac{1250}{9}$$

$$r = \frac{5}{3}$$

$$45) \frac{10}{2}(-1 + 17) = 80$$

$$46) \frac{8}{2}(17 + -4) = 52$$

$$47) \frac{11}{2}(4\frac{2}{3} + 11\frac{1}{3}) = 88$$

$$48) \frac{25}{2}(1 + 19) = 250$$

$$49) 1\left(\frac{1-2^7}{1-2}\right) = 127$$

$$50) 1\left(\frac{1-(-4)^7}{1+4}\right) = 3277$$

$$51) 250\left(\frac{1-1.02^4}{1-1.02}\right) = 1030.402$$

$$52) \frac{1.3}{1-\frac{1}{10}} = 1.44$$

$$53) {}_{10}C_8 = \frac{10 \cdot 9 \cdot 8 \cdot 7 \cdot 6 \cdot 5 \cdot 4 \cdot 3}{8!} = 45$$

$$54) {}_{12}C_5 = \frac{12 \cdot 11 \cdot 10 \cdot 9 \cdot 8 \cdot 7}{5!} = 5544$$

$$55) {}_9C_4 = \frac{9!}{5!4!} = \frac{9 \cdot 8 \cdot 7 \cdot 6}{4 \cdot 3 \cdot 2 \cdot 1} = 126$$

$$56) {}_{14}C_{12} = \frac{14!}{2!12!} = \frac{14 \cdot 13}{2} = 91$$

$$57) (x+5)^4 = x^4 + 4(x)^3(5) + 6x^2(5)^2 + 4x(5)^3 + 5^4$$

$$x^4 + 20x^3 + 150x^2 + 500x + 625$$

$$58) (y-3)^3 = y^3 + 3y^2(-3) + 3y(-3)^2 + (-3)^3$$

$$y^3 - 9y^2 + 27y - 81$$

$$59) (a-4b)^5 = a^5 + 5a^4(-4b) + 10a^3(-4b)^2 + 10a^2(-4b)^3 + 5a(-4b)^4 + (-4b)^5$$

$$a^5 - 20a^4b + 160a^3b^2 - 640a^2b^3 + 1280ab^4 + 1024b^5$$

$$60) (7+2i)^4 = 7^4 + 4 \cdot 7^3(2i) + 6 \cdot 7^2(2i)^2 + 4 \cdot 7(2i)^3 + (2i)^4$$

$$2401 + 2744i - 1176 + 56i + 16$$

$$= 1227 + 2800i$$

$$62) (4-5i)^3 = 4^3 + 3(4)^2(-5i) + 3(4)(-5i)^2 + (-5i)^3$$

$$= 64 - 240i - 300 + 125i^3$$

$$= -111 - 240i$$