

## Algebra II

pg 513

2)	$a_n = 500\left(\frac{1}{5}\right)^{n-1}$	16)	$\frac{8}{3}$	30)	arithmetic $a_n = -23 + 6n$
4)	$a_n = 8\left(\frac{3}{2}\right)^{n-1}$	18)	$a^{25} b^{74}$	32)	geometric $a_n = e^{nx}$
6)	$a_n = -\left(-\frac{1}{10}\right)^{n-1}$	20)	$\frac{\sqrt{6}}{36}$	34)	geometric $a_n = \left(\frac{a^2}{2}\right)^n$
8)	10,240	22)	$-18\sqrt{2}$	36)	arithmetic $a_n = -3 + 4n$
10)	-2187	24)	12, -36	38)	$a_n = \frac{n}{3n-1}$
12)	-3,906,250	26)	$\frac{\sqrt{10}}{10}, \frac{1}{2}, \frac{\sqrt{10}}{4}$		
14)	-768	28)	arithmetic $a_n = 2n + 1$		

$$14) \quad t_3 = -12 \quad t_6 = 96 \quad t_9 =$$

$$t_1 = -12 \quad t_4 = 96 \quad t_7 =$$

$$-12, \quad \_, \quad \_, \quad 96$$

$$r = \sqrt[3]{\frac{96}{-12}} = \sqrt[3]{-8} = -2$$

$$t_7 = -12(-2)^{7-1} = \boxed{768}$$

$$20) \frac{1}{12} \cdot \frac{1}{18}$$

$$\frac{1}{12} \cdot \frac{1}{18}$$

$$r = \sqrt{\frac{\frac{1}{18}}{\frac{1}{12}}} = \sqrt{\frac{12}{18}} = \sqrt{\frac{2}{3}}$$

$$\frac{1}{12} \cdot \frac{\sqrt{2} \sqrt{2}}{\sqrt{3} \sqrt{3}} = \frac{\sqrt{6}}{36}$$

$$\frac{\sqrt{2}}{12\sqrt{3}}$$

$$26) 3; \frac{1}{5}, \frac{5}{4}$$

$$\frac{1}{5} \cdot \frac{\sqrt{5}}{\sqrt{2}} \cdot \frac{\sqrt{5}}{\sqrt{4}} \cdot \frac{\sqrt{5}}{2\sqrt{2}} \cdot \frac{5}{4}$$

$$\sqrt[4]{\frac{5}{4} \cdot \frac{5}{1}} = \sqrt[4]{\frac{25}{4}} = \frac{\sqrt{5}}{\sqrt{2}}$$

$$\sqrt{\frac{25}{4}}$$

28) 3, 5, 7, 9, ...  
arithmetic

$$3 + 2(n-1)$$

$$\boxed{1 + 2n}$$

30) -17, -11, -5, 1

$$a_n = -17 + 6(n-1)$$

32)  $e^{1x}$   $e^{2x}$   $e^{3x}$   $e^{4x}$  ...  
 $a_1$   $a_2$   $a_3$   $a_4$   
geometric

$$a_n = e^{nx}$$

$$e^x (e^x)^{n-1}$$

$$e^x \cdot e^{x(n-1)}$$