Honors Algebra 2	
Chapter 12 Review	W\$

Name _		- -	
	Hour	•	

Write each series in summation notation.

3.
$$1-1+1-1+1-1+1$$

$$\sum_{K=1}^{7} (-1)^{K-1}$$

5.
$$\frac{1}{4} + 2 + \frac{23}{4} + 11 + \frac{71}{4} + 26$$

$$\frac{6}{2} 3 \times 2 - 4 \approx \sum_{k=1}^{6} \frac{3}{4} \times k^{2} - 1$$

2. $\frac{3}{2} + \frac{3}{4} + \frac{1}{2} + \frac{3}{8} + \frac{3}{10} + \frac{1}{4} + \frac{3}{14}$

$$(-1)^{K-1} = \frac{4 \cdot 10 + 1 + \frac{1}{10} + \frac{1}{100} + \frac{1}{1000}}{\sum_{k=1}^{5} 10 \left(\frac{1}{10}\right)^{K-1}} = \sum_{k=1}^{5} \frac{1}{100} \left(\frac{1}{10}\right)^{K-1} = \sum_{k=1}^{$$

6.
$$0+2+6+12+20+30$$

$$\sum_{k=1}^{6} (k^2-k) \quad \text{or} \quad \sum_{k=1}^{6} k(k-1)$$

Find the geometric mean of each pair of numbers.

7. 9 and 25

8. 12 and 27

18

Find the 12th term of each arithmetic sequence.

9.
$$a_4 = 88$$
 and $a_8 = 29$

10.
$$a_{10} = -17$$
 and $a_{22} = 13$

12.
$$a_{42} = 52.2$$
 and $a_{51} = 50.4$

11.
$$a_{20} = 1.4$$
 and $a_{30} = 7.2$
-2.24

12.
$$a_{42} = 52.2$$
 and $a_{51} = 50.4$
 58.2

Find the indicated sum for each arithmetic series.

13.
$$S_{12}$$
 for $101 + 95 + 89 + 83 + ...$

14.
$$S_{30}$$
 for $-4.2 + (-1) + 2.2 + 5.4 + ...$

216

1266

Find the indicated sum for each geometric series.

15
$$S_{25}$$
 for $-1+2-4+8-16+32-64+...$ 16 S_9 for $2500+1500+900+540+...$

16
$$S_9$$
 for 2500 + 1500 + 900 + 540 + ...

17. Determine if the sequence is arithmetic. If it is, find the common difference, the A) 34, 24, 14, 4, ... d = -10 asz= -476 an = 44-10n

A) 34, 24, 14, 4, ...
$$d = -10$$
 $as_{2} = 986$ $as_{3} = 200 - 54$

C) 37, 46, 55, 64, ...
$$d = Q$$

18. Given the first term and the common difference of an arithmetic sequence find the 52nd term and the explicit formula.

A)
$$a_1 = -10$$
, $d = -2$
B) $a_1 = 2$, $d = 9$

C)
$$a_1 = -23$$
, $d = -6$

		quence and the common difference	find the 52nd
term and the explicit f A) $a_{34} = -296$, $d = -10$	ormula. _ → → → \	an = -10 n +44	
B) $a_{25} = 445$, $d = 20$	985	an = 20n -55	:
C) $a_{15} = -104$, $d = -9$	-437	an = -9n +3)	:

20. Given two terms in an arithmetic sequence find the 52nd term and the explicit formula.

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Tormula.
A) a_{20} = -155 and a_{35} = -275
B) a_{20} = -3815 and a_{34} = -6615 -10,215 a_{10} = -200 + 185
C) a_{18} = 193 and a_{33} = 343 533 a_{10} = 100 + 13
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21. Determine if the sequence is geometric. If it is, find the common ratio, the 8th term,

and the explicit formula.

A)
$$-3$$
, -9 , -27 , -81 , ...

B) -2 , 6 , -18 , 54 , ...

C) -2 , -4 , -8 , -16 , ...

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22. Given the first term and the common ratio of a geometric sequence find the 8th

term and the explicit formula.

A)
$$a_1 = 1$$
, $r = 2$

B) $a_1 = -1$, $r = 6$

C) $a_1 = -3$, $r = -5$
 $a_1 = -3$, $a_2 = -6$
 $a_2 = -6$
 $a_3 = -6$
 $a_4 = -6$
 $a_5 = -6$
 $a_5 = -6$
 $a_5 = -6$

23. Given a term in a geometric sequence and the common ratio find the 8th term and the explicit formula.

the explicit formula.
A)
$$a_5 = -324$$
, $r = -3$
B) $a_2 = 3$, $r = -3$
C) $a_5 = -768$, $r = -4$
8748
 $a_1 = -4(-3)^{n-1}$
 $a_2 = 3$, $a_3 = -4(-3)^{n-1}$
 $a_4 = -4(-3)^{n-1}$

24. Given two terms in a geometric sequence find the 8th term and the explicit formula.

A)
$$a_2 = 5$$
 and $a_6 = 3125$
B) $a_3 = 100$ and $a_5 = 2500$ $a_4 = 2500$ $a_5 = 36$ and $a_4 = 216$ $a_5 = 36$ and $a_4 = 216$ $a_5 = 36$ $a_6 = 36$ $a_6 = 36$

25. Evaluate each arithmetic/ geometric series described.

A)
$$\sum_{k=1}^{15} (11-2k) = 75$$
B)
$$\sum_{k=1}^{7} (-3)^{k-1} = 547$$

- C) S₁₅ for 8 + 10 + 12 + 14... 33 D) S₁₅ for -4 8 16 32... \3\,068
- E) S₁₅ for 1 + 4 + 16 + 64... \ 2.40

26. Jacie is considering a job that offers a monthly starting salary of \$4000 and guarantees her a monthly raise of \$190 during her first year on the job. Find the general rule for this sequence and her monthly salary at the end of her first year. $O_N = 190n + 3810$

27. Find the sum of the first 20 terms of the arithmetic sequence: -12, -6, 0, 6, . . . 9 00

Find the sum of the first 30 terms of the arithmetic sequence: 10, 5, 0, -5, ...

29.	As part of her retirement savings plan, Patricia deposited \$250 in a bank account du	uring her first
	year in the workforce. During each subsequent year, she deposited \$45 more than t	he previous
	year. Find how much she deposited during her twentieth year in the workforce. Find	the total
	amount deposited in the twenty years 91105 43,550	:

MULTIPLE CHOICE

30. What is a formula for the *n*th term of sequence *B* shown below?

$$B = 10, 12, 14, 16, \dots$$

$$b_n = 10 + (n-1)2$$

8+2n

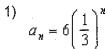
1)
$$b_n = 8 + 2n$$

2) $b_n = 10 + 2n$

3)
$$b_{x} = 10(2)^{x}$$

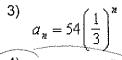
4)
$$b_n = 10(2)^{n-1}$$

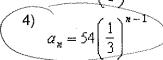
31. What is the formula for the *n*th term of the sequence $54, 18, 6, \dots$?



$$Q_n = SY\left(\frac{1}{3}\right)^{n-1}$$

$$a_{n} = 6 \left(\frac{1}{3}\right)^{n-1}$$





32. What is the common difference of the arithmetic sequence 5, 8, 11, 14?



- 4) 9
- 33. What is the common ratio of the geometric sequence whose first term is 27 and fourth term is 64?

1)
$$\frac{3}{4}$$

se first term is 27 and fourth term is
$$Q_{N} = Q_{1} \cdot V^{-1}$$

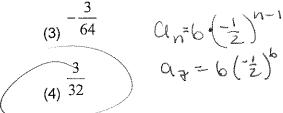
$$Q_{N}$$

2) б4

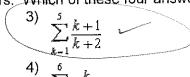
- **34.** Find the 7th term of the geometric sequence for which a1 = 6 and r = 6

(1) 2

(2) $\frac{1}{2}$



35. Jonathan's teacher required him to express the sum $\frac{2}{3} + \frac{3}{4} + \frac{4}{5} + \frac{5}{6} + \frac{6}{7}$ using sigma notation. Jonathan proposed four possible answers. Which of these four answers is not correct?



36. Find the first three terms of the recursive sequence defined below.

$$a_1 = -3$$

$$a_n = a_{(n-1)} - n$$

Look over more story problems~