

Sequences & Series HW - Arithmetic thru Geometric Sequence

- 1 What is a formula for the n th term of sequence B shown below?

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

- 1) $b_n = 8 + 2n$ 2) $b_n = 10 + 2n$ 3) $b_n = 10(2)^n$
4) $b_n = 10(2)^{n-1}$

- 2 The value of the expression $2 \sum_{n=0}^2 (n^2 + 2^n)$ is

- 1) 12 2) 22 3) 24 4) 26

- 3 What is the common difference of the arithmetic sequence 5, 8, 11, 14?

- 1) $\frac{8}{5}$ 2) -3 3) 3 4) 9

- 4 Mrs. Hill asked her students to express the sum $1 + 3 + 5 + 7 + 9 + \dots + 39$ using sigma notation. Four different student answers were given. Which student answer is correct?

1) $\sum_{k=1}^{20} (2k-1)$ 2) $\sum_{k=2}^{40} (k-1)$ 3) $\sum_{k=-1}^{37} (k+2)$

4) $\sum_{k=1}^{39} (2k-1)$

- 5 What is the common ratio of the geometric sequence whose first term is 27 and fourth term is 64?

- 1) $\frac{3}{4}$ 2) $\frac{64}{81}$ 3) $\frac{4}{3}$ 4) $\frac{37}{3}$

- 6 What is the value of $\sum_{m=1}^3 (2m+1)^{m-1}$?

- 1) 15 2) 55 3) 57 4) 245

- 7 What is the value of $\sum_{m=2}^5 (m^2 - 1)$?

- 1) 58 2) 54 3) 53 4) 50

- 8 What is the value of $3 \sum_{n=2}^6 \frac{n}{2}$?

- 1) 10 2) 13 3) 30 4) 60

- 9 Evaluate: $\sum_{k=0}^4 (3k-5)$

Sequences & Series HW - Arithmetic thru Geometric Sequence Answer Section

1 ANS: 1

common difference is 2. $b_n = x + 2n$

$$10 = x + 2(1)$$

$$8 = x$$

PTS: 2

REF: 081014a2

STA: A2.A.29

TOP: Sequences

2 ANS: 3

n	0	1	2	Σ
$n^2 + 2^n$	$0^2 + 2^0 = 1$	$1^2 + 2^1 = 3$	$2^2 + 2^2 = 8$	12

$$2 \times 12 = 24$$

PTS: 2

REF: fall0911a2

STA: A2.N.10

TOP: Sigma Notation

KEY: basic

3 ANS: 3

PTS: 2

REF: 061001a2

STA: A2.A.30

TOP: Sequences

4 ANS: 1

PTS: 2

REF: 061025a2

STA: A2.A.34

TOP: Sigma Notation

5 ANS: 3

$$27r^{4-1} = 64$$

$$r^3 = \frac{64}{27}$$

$$r = \frac{4}{3}$$

PTS: 2

REF: 081025a2

STA: A2.A.31

TOP: Conjugates of Complex Numbers

6 ANS: 2

m	$(2m + 1)^{m-1}$		
1	$(2(1) + 1)^{1-1}$	3^0	1
2	$(2(2) + 1)^{2-1}$	5^1	5
3	$(2(3) + 1)^{3-1}$	7^2	49
Σ			55

PTS: 2

REF: 060117b

STA: A2.N.10

TOP: Sigma Notation

KEY: basic

7 ANS: 4

m	$m^2 - 1$	
2	$2^2 - 1$	3
3	$3^2 - 1$	8
4	$4^2 - 1$	15
5	$5^2 - 1$	24
Σ		50

PTS: 2

REF: 060201b

STA: A2.N.10

TOP: Sigma Notation

KEY: basic

8 ANS: 3

$$s_n = \frac{n(a_1 + a_n)}{2} \quad \cdot \quad 10 \times 3 = 30$$

$$s_5 = \frac{5(1 + 3)}{2} = 10$$

PTS: 2

REF: 011003b

STA: A2.A.35

TOP: Summations

KEY: arithmetic

9 ANS:

5

PTS: 2

REF: 080302siii

STA: A2.A.35

TOP: Summations

KEY: arithmetic