Name:

For numbers 1-3, write the first three terms of each sequence whose general rule is given.

1.
$$a_n = 3n + 2$$

2.
$$a_n = 3^n$$

3.
$$a_n = (-3)^n$$

Hoer

For numbers 4-5, find each indicated sum.

$$4.\sum_{n=1}^{6} 5n$$

$$4. \sum_{n=1}^{6} 5n \qquad 1 \qquad 2 \qquad 3 \qquad 4 \qquad 5 \qquad 6$$

$$5 + 10 + 15 + 20 + 25 + 30$$

5.
$$\sum_{n=5}^{9} 2n^2 - n$$

$$\left[2(5)^2 - (5) \right] + \left[2(6)^2 - (6) \right] + \left[2(7)^2 - (7) \right]$$

$$+ \left[2(8)^2 - (8) \right] + \left[2(5)^2 - (9) \right] - \left[475 \right]$$

$$45 + 66 + 91 + 100 + 153$$

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$$45 + 66 + 91 + 100 + 153$$

$$45 + 66 + 91 + 100 + 153$$

$$45 + 66 + 91 + 100 + 100 + 100$$

$$45 + 66 + 100$$

For numbers 6-8, express each sum using summation notation. Use 1 as the lower limit of summation and n for the index of summation.

$$6.1+4+7+10+13, \dots$$

$$8.\frac{1}{4} + \frac{1}{2} + \frac{3}{4} + 1 + \frac{5}{4}$$

$$a_1 = \frac{1}{4} + (n-1)(\frac{1}{4})$$

$$q_n = 2n$$

$$15$$

$$2n$$

$$n=1$$

For numbers
$$9 - 11$$
, write the rule for the *n*th term.

9.
$$a_1 = 200, d = 20$$

10.
$$a_4 = 26$$
, $d = -2$

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, $d = -2$

10.
$$a_4 = 26, d = -2$$

$$G_1 = 30$$

$$G_2 = 30$$

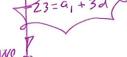
$$G_3 = 30$$

$$G_4 = 26$$

$$G_4 = 26$$

11.
$$a_2 = -15$$
, $a_4 = -23$

$$a_2 = a_1 + (2 - 1)d$$
 $a_4 = a_1 + (4 - 1)d$
 $a_5 = a_1 + a_1 + a_2 + a_3 + a_4 + a_4 + a_4 + a_5 + a_6 +$



$$-23+15 = -8 = -4 = d$$

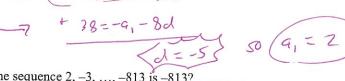
Go from there.



12. Find a_{50} when $a_1 = 7$, d = 5.

9200 - 3982

14. $a_9 = -38$, $a_{74} = -363$, $a_1 = ?$



15. Which term in the sequence 2, -3, ..., -813 is -813

$$-813 = 2 + (n-1)(-5) \qquad n = 164$$

$$-813 = 2 - 5n + 5$$

13. $a_1 = 2$, $a_2 = 22$, $a_{200} = ?$

16. Find the sum of the first 20 terms of the arithmetic sequence: 4, 10, 16, 22, ...

$$5_{20} = \frac{20}{2} \left(4 + 48 \right)$$
 $5_{20} = 1220$

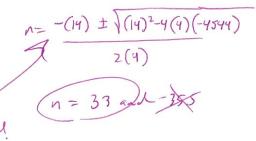
$$G_{20} = 4 + (20-1)(6)$$

17. Find *n* for the given sum $S_n = 2272$ of the arithmetic series: 9 + 13 + 17 + 21 + 25 + ...



$$a_n = 9 + (n-1)(4)$$

$$a_n = 4n + 8$$



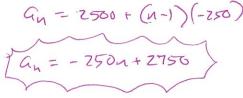
18. Kathryn started saving quarters in a jar. She began by putting two quarters in the jar the first day and then she put one additional quarter in the jar each successive day. 91=2

a) Use sigma notation to represent the total number of quarters Kathryn has after 10 days.



19. In a charity golf tournament, each of the top ten finishers wins a donation to the charity of his or her choice. The amount of donation follows the arithmetic sequence shown in the picture below. What is the total amount of money donated to charity as a result of the tournament?





0 = -250 n+ 2750

