

Review For retake Name _____

Unit 10 Summative

Assessment

*You must fully complete any section that you are wanting to retake, including the reflection question at the end of each target.

10.1 I can differentiate between a sequence and a series

a) explain the difference between a sequence and a series

b) give an example of an arithmetic sequence

c) give an example of a geometric sequence

d) give an example of an arithmetic series

e) give an example of a geometric series

Reflection:

What errors were you making on these problems?

What steps/concepts do you need to remember to help you on the retake?

10.2 I can find the nth term of an arithmetic sequence

Find the nth term of the following:

1) $n=71$ of $-19, -4, 11, 26, \dots$

2) $n=36$ of $-11, -13, -15, -17, \dots$

3) $n=19$ of $9, 6, 3, 0, \dots$

4) $n=104$ of $1/7, 3/7, 5/7, 1, \dots$

5) Find the 200th term of this arithmetic sequence

$14, 18, 22, 26, \dots$

6) The first term of an arithmetic sequence is -25 and the constant difference is d_1 . The first term of another sequence is 80 and its constant difference is d_2 . If the 15th term of both sequences are the same, what must be true about d_1 and d_2 .

Reflection:

What errors were you making on these problems?

What steps/concepts do you need to remember to help you on the retake?

10.3 I can find the nth term of a geometric sequence

1) $n=17$ of 2, -4, 8, -16, ...

2) $n=1237$ of -1, 1, -1, 1, -1, ...

3) $n=9$ of 5, 35, 245, 1715, ...

4) $n=10$ of 64, 32, 16, 8, 4, ...

5) In a geometric sequence where $a_1=5$ and $a_5=1280$, what is the first term in the sequence that is a multiple of 8?

Reflection:

What errors were you making on these problems?

What steps/concepts do you need to remember to help you on the retake?

10.4 I can find the sum of a finite arithmetic series

- 1) This table shows some terms of an arithmetic sequence. The sum of the first n terms is 810. What is the n th term?

n	1	2	3	4	5	6	7
a_n		54			63		69

- 2) What is the sum of the arithmetic sequence $a, b, c, d, e, f,$ and g in terms of $a, b, c, d, e,$ and f ?
- 3) On the first of every month, a store receives a new shipment of 150 boxes of cereal. If the store starts with 671 boxes of cereal, how many boxes of cereal will it have at the end of 4 years assuming it has sold no boxes?
- 4) For the arithmetic sequence $\{a_n\}$, $a_5=14$ and $a_8=68$. Find the sum of the first 12 terms.
- 5) Find the sum of the series

$$\sum_{x=1}^{45} 42-8x$$

Reflection:

What errors were you making on these problems?

What steps/concepts do you need to remember to help you on the retake?

10.5 I can find the sum of a finite geometric series

1)
$$\sum_{n=12}^{22} n^2 - 5n$$

2)
$$\sum_{n=2}^8 n^3$$

3) Find the sum of the first 40 terms of the series
 $128+64+32+16+8+\dots$

4) Find n given that $S_n=7,174,453$ for the series
 $1+3+9+27+\dots$

5) Find the sum of the first 10 terms of the series
 $8+40+200+1000+\dots$

Reflection:

What errors were you making on these problems?

What steps/concepts do you need to remember to help you on the retake?

10.6 I can write a rule for a sequence

1) Write a rule for the arithmetic sequence where $a_3=10$ and $a_7=26$

2) Write a rule for 3, -6, 12, -24, 48...

3) Write a rule for the n th term of a geometric sequence where $a_2=100$ and $a_5=1/10$

4) Write a rule for 7.8, 6.6, 5.4, 4.2, 3.0, ...

5) Write a rule for for the sequence 16, 8, 4, 2, 1, .5, ...

Reflection:

What errors were you making on these problems?

What steps/concepts do you need to remember to help you on the retake?

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10.7 I can find the position of a given term of an arithmetic sequence

1) An arithmetic sequence has a constant difference of 4b and a first term of x. The nth term has a value of 96. What is the value of n?

2) Given an arithmetic sequence where $a_1=10$, $a_5=30$, and $a_n=155$, what is the value of n?

3) Given an arithmetic sequence where $a_1=6$, $d=7$, and $a_n=55$, what is the value of n?

4) Given an arithmetic sequence where $a_1=16$, $d=-6$, and $a_n=-602$, what is the value of n?

5) Given an arithmetic sequence where $a_1=-64$, $a_3=14$, and $a_n=102$, what is the value of n?

Reflection:

What errors were you making on these problems?

What steps/concepts do you need to remember to help you on the retake?

10.8 I can find the position of a given term of a geometric sequence

1) Tyler starts with \$2 on day one and doubles his money every day thereafter. On which day will he first have more than \$20,000?

2) Given a geometric sequence with $a_1=3$, $r=2$, and $a_n= 3072$, what is the value of n ?

3) Given a geometric sequence with $a_1=3200$, $r=1/2$, and $a_n= 6.25$, what is the value of n ?

4) Given a geometric sequence with $a_1=2$, $a_3=8$, and $a_n= 4096$, what is the value of n ?

5) Given a geometric sequence with $a_1=3$, $r=-2$, and $a_n= -24576$, what is the value of n ?

Reflection:

What errors were you making on these problems?

What steps/concepts do you need to remember to help you on the retake?

1) Evaluate $\sum_{x=1}^{17} (8-5^x)$

2) Use sigma notation to represent this sum

$$15+17+19+21+23+25+\dots+79$$

3) Evaluate $\sum_{x=1}^{35} (507-2x)$

4) Evaluate $\sum_{x=1}^{27} (2x+9)$

5) Write in sigma notation $9+3+1+1/3+1/9+1/27$

Reflection:

What errors were you making on these problems?

What steps/concepts do you need to remember to help you on the retake?

10.10 I can use sequences and series to solve real-world problems

1) In the first year, the tuition at a college is \$4,225. If the tuition increases by \$371 per year, how much will tuition be in the 10th year?

2) In her garden, Bailey is creating a brick mosaic in a trapezoidal shape. The pattern has 10 rows. The first row has 7 bricks, and the last row has 30 bricks. Given that Bailey's pattern follows an arithmetic sequence, how many bricks does she need? (note: partial bricks are allowed)

3) Jacob and Brant are each creating a trapezoidal brick patio in their gardens. In total, Jacob uses twice the bricks that Brant uses. The first row of Brant's garden has 6 bricks and the last row has 32 bricks, with n rows. Given that the pattern follows an arithmetic sequence, how many bricks are in Jacob's garden?

4) A career advisor tells Tay that an architect earns \$43,913 for the first year, and there is a 1.5% annual increase. If Tay takes a job as an architect, what will be her highest annual salary after working for a total of 31 years?

5) Michael is starting a new workout program where he completes 4 more pull-ups than the day before. If he starts with 5 pull-ups, how many will he do in the 17th day?

Reflection:

What errors were you making on these problems?

What steps/concepts do you need to remember to help you on the retake?