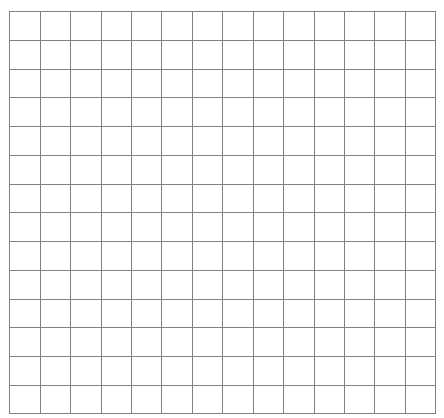
**TOOLKIT FUNCTIONS**

NOTES:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Perform the operations below given and .

a. b. c.

2. Graph the piecewise function and then evaluate for the inputs listed.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. Find the inverses of the following functions:

a. b. c.

4. Given the parent function: , write a new function after applying the following tranformations:

a. A reflection in the x-axis and a translation up four spaces.

b. A vertical stretch by a factor of 3 and a translation left three spaces.

c. A vertical compression by a factor of ½, a translation down four and right 2.

**SEQUENCES AND SERIES**

NOTES:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Find the limit of each.

a. b. c.

2. Find the 18th term of the sequence: ….

3. Find the 11th term in the sequence: 2, 6, 18…

2. Find the sum of the first 18 terms of the sequence

3. Find the sum of the first 20 terms in the sequence

4. Is the following series convergent or divergent?

If it is convergent, find the sum.

5. Find the common difference for a sequence in which and

6. Write the first four terms of the sequence where and .