Name: _____ Date: _____

Regents Review Day 7: Radicals and Sequences (Arithmetic & Geometric)

1.

Ms. Fox asked her class "Is the sum of 4.2 and $\sqrt{2}$ rational or irrational?" Patrick answered that the sum would be irrational. State whether Patrick is correct or incorrect. Justify your reasoning.

$4.2 + \sqrt{2}$

R + I = I

The sum of a rational # and an irrational # is always irrational. ÷

2.

The product of $\sqrt{576}$ and $\sqrt{684}$ is

1) irrational because both factors are irrational
2) rational because both factors are rational
3) irrational because one factor is irrational
4) rational because one factor is rational

R I

3.

In a sequence, the first term is 4 and the common difference is 3. The fifth term of this sequence is

1) −11
2) −8
3) 16
4) 19

4, 7, 10, 13, 16

1 2 3 4 5

4, 1, −2, −5, −8

4.

Determine and state whether the sequence 1, 3, 9, 27 . . . displays exponential behavior. Explain how you arrived at your decision.

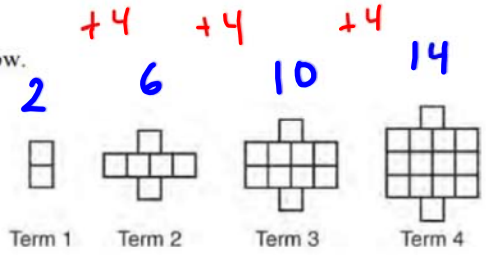
linear → CONSTANT +/−

exponential → × or ÷

This sequence has a common ratio of 3.

5.

A pattern of blocks is shown below.



If the pattern of blocks continues, which formula(s) could be used to determine the number of blocks in the *n*th term?

I	II	III
$a_n = n + 4$	$a_1 = 2$ $a_n = a_{n-1} + 4$	$a_n = 4n - 2$

1) I and II
2) I and III
3) II and III
4) III, only

$a_{n-1} + 4$

$a_{2-1} + 4$

$a_1 + 4$

$2 + 4 = 6$

Regents Exam Test Taking Strategies (And Things to Keep in Mind!)

1. Always **read math problems completely** before beginning any calculations. If you "glance" too quickly at a problem, you may misunderstand what really needs to be done to complete the problem.

2. **USE YOUR CALCULATOR TO THE BEST OF YOUR ABILITY. Look at the graph. Look at the table.** Keywords to look out for:

- Equivalent
- Same
- Zeros/Solutions/Roots
- Any function – f(x) or y=

3. Whenever possible, **draw a diagram**. Even though you may be able to visualize the situation mentally, a hand drawn picture may allow you to label the picture, and to view the situation from different perspectives.

4. If you know that your answer to a question is incorrect, and you cannot find your mistake, start over on a clean piece of paper. Oftentimes when you try to correct a problem, you continually overlook the mistake. Starting over on a clean piece of paper will let you focus on the question, not on trying to find the error.

5. Do not feel that you must use every number in a problem when doing your calculations. Some mathematics problems have "extra" information. These questions are testing your ability to recognize the needed information, as well as your mathematical skills.

6. **Be sure that your answer "makes sense" (or is logical).** For example, if a question asks you to find the number of feet for the length of a garden and your answer comes out to be a negative number, know that this answer is incorrect. (Distance is a positive concept - we cannot measure negative feet.)

7. If time permits, **go back** and resolve the more difficult problems on the test on a separate piece of paper. If these "new" answers are the same as your previous answers, chances are good that your solution is correct.

8. **Remain confident! Do not get flustered! Focus on what you DO know, not on what you do not know. You know a LOT of math!!**

9. When asked to "show work" or "justify your answer", **don't be lazy**. Write down EVERYTHING about the problem, including the work you did on your calculator. Include diagrams, calculations, equations, and explanations written in complete sentences. Now is the time to "show off" what you really can do with this problem.

10. If you are "stuck" on a particular problem, go on with the rest of the test. Oftentimes, while solving a new problem, you will get an idea as to how to attack that difficult problem.

11. If you simply cannot determine the answer to a question, make a guess. Think about the problem and the information you know to be true. Make a guess that will be logical based upon the conditions of the problem.