Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Algebra II

Score: \_\_\_\_\_\_ / 25

Period: \_\_\_\_\_\_\_\_\_\_\_\_\_ **Cumulative Review #3.1**

***Directions:*** Show all work in order to receive full credit. A correct answer with no supporting work will only receive one credit. Be sure to show all appropriate formulas and formula substitutions as part of your work.

1. Evan graphed a cubic function, , and determined the roots of  to be  and 2. What is the value of *b*, if ? **[show all work for full credit]**
2. 1 (b) 2 (c) -1 (d) -2
3. Irma initially ran one mile in over ten minutes. She then began a training program to reduce her one-mile time. She recorded her one-mile time once a week for twelve consecutive weeks, as modeled in the graph below. 

Which statement regarding Irma’s one-mile training program is correct? **[show all work for full credit]**

|  |  |  |  |
| --- | --- | --- | --- |
| 1) | Her one-mile speed increased as the number of weeks increased. | 3) | If the trend continues, she will run under a six-minute mile by week thirteen. |
| 2) | Her one-mile speed decreased as the number of weeks increased. | 4) | She reduced her one-mile time the most between weeks ten and twelve. |

1. What is the solution when the equation  is solved for *x*, where *w* is a positive integer? **[show all work for full credit]**
2. $-1$ (b) $0$ (c) $6$ (d) $\pm i$
3. Determine for which polynomial(s)  is a factor. Explain your answer.



1. The completely factored form of  is **[show all work for full credit]**

|  |  |  |  |
| --- | --- | --- | --- |
| 1) |  | 3) |  |
| 2) |  | 4) |  |