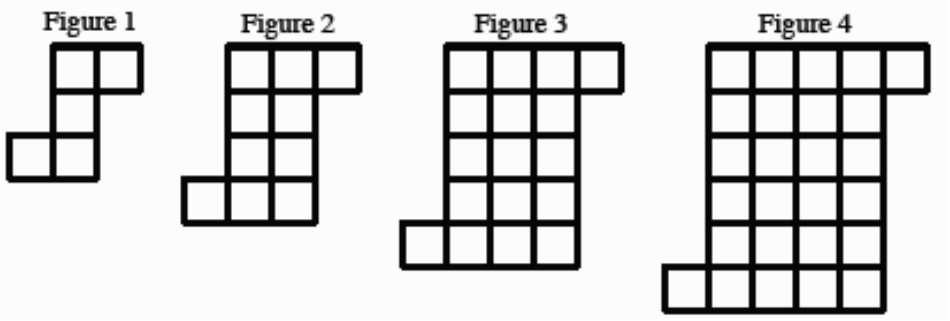
Birthday Polynomial # 2



1) Draw Figure 5.
2) Predict the number of squares in figure 30.
3) Show what you did to get your prediction.
4) Write the Recursive Equation.
5) Write the Explicit Equation.
6) State your Birthday Polynomial **B(x)** used in Part 1.
7) Birthday Graph, Maximum, and Minimum of the curves.
8) What are the roots from Part 1 and pick one.
   Pick one root. Call it R. R = _____. Do not round off R when you find the root and store it in the calculator.
9) Divide $\frac{B(x)}{x-R}$
   Write the Quotient. Q (x) = _____.
   Note: There should be no remainder. (Or almost no remainder… remember not to round off the Root, and it should come out without a remainder.)

10) Graph the quadratic polynomial Q (x).
11) Find its vertex. Call the point (H,K). (Remember to keep H and K without rounding the values.)
    Now find the following. Round all of the following answers to 3 decimal places.
12) 2 H + R
13) H^2 + K + 2 R * H
14) R * (H^2 + K)
15) What do you notice?

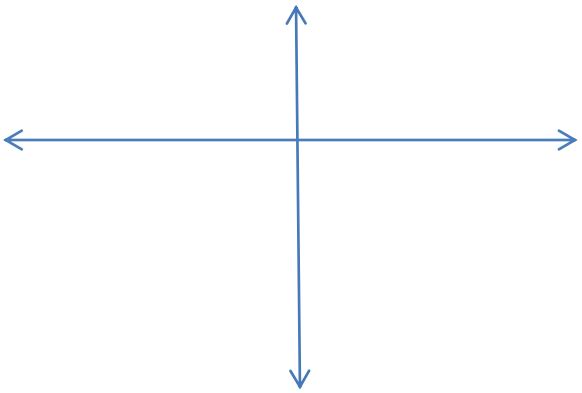
Honors Math 3 – Birthday Polynomial – Part 2 Name _____

1. Draw Figure 5 below:

2. Figure 30 = _____

3. Explanation

7. Birthday Graph



Maximum(s) _____

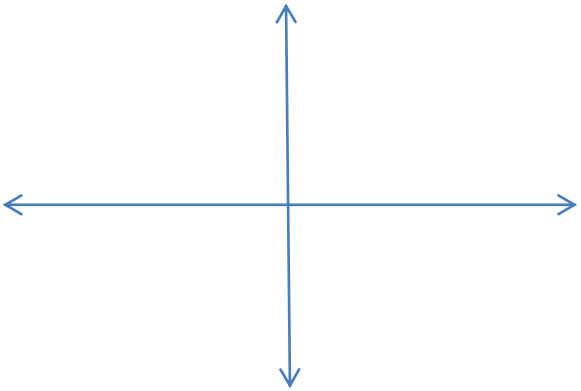
Minimum(s) _____

8. Birthday Roots _____

Pick one of the Roots

R = _____
(Give all of the decimals from the Graphing Calculator screen.)

9. Q (x) = _____
10. Graph Q (x).



4. Recursive for # 1

5. Explicit _____

6. "Your" Birthday _____

"Your" Birthday Polynomial

18. B(2x) =

_____

11. Vertex (H, K) = _____

12. 2 H + R = _____

13. $H^2 + K + 2 R * H$ = _____

14. $R * (H^2 + K)$ = _____

15. What do you notice about the results from # 12 – 14?

16. s B (x) a one – to – one function? How do you know?

Circle: Yes or No

_____

17. Is B (x) even, odd, or neither? How do you know?

Circle: Even Odd or Neither

_____

19. Is B(2x) a horizontal stretch or a horizontal shrink?

Circle: Stretch or Shrink

20. Write the first five terms of each of the following sequences.

a. f(0) = -5; f(n) = f(n-1) + 8

f(1) =	f(2) =	f(3) =	f(4) =	f(5) =