

Name: _____

Block: _____

**Algebra 2H: Polynomials and Polynomial Equations
Group A**

1. There are 20 questions in this test, each worth 2pts.
2. Extra-credit: There are 2 additional questions, worth 1pt each.
3. You have 40 minutes to complete the test (more if you have accommodations).

I want this to be a demonstration of your knowledge of the material studied.

There are no tricky-questions. Most (all!) of the questions are similar to things you have seen in class examples, homework, and worksheets.

HINTS available:

This is meant to avoid getting zero on a question because you forgot a formula, or blanking out.

1. Each question has a designated hint to it.
2. You can buy a hint for 0.5 point.
3. You will NOT get negative points on a question.
4. Hints can be bought only after 20 minutes from start of test, and not later than 5 minutes before the end. I will try and announce these times.

Again, the goal is to avoid having empty answers!

Good luck!!

-Zach

=== Start of test

- 1) Given the expression $8x^6 + 2x^2 + 2$, answer the below three questions:
- The polynomial has _____ terms
 - The degree of the polynomial is _____
 - Circle most appropriate name: Binomial , Trinomial , Polynomial

2) Simplify $(5x^2y - 2xy^2 + 3xy - 5) + (-2x^2y - 3xy^2 + 4xy + 7)$

3) Simplify $(-x^3 + 3x^2 - 2x + 2) - (-x^3 + 5x^2 - 8x + 4)$

4) Simplify $(2x + 3y)(2x + y)$

5) Simplify $(5x + 2y)^2$

6) Simplify $(2x + 4)(3x^2 + 7x - 3)$

7) Simplify $(2x - 3y)(4x^2 + 6xy + 9y^2)$

8) Factor $x^2 - 8x + 16$

9) Factor $-18y^2 + y^3 + 81y$

10) Factor $x^4 - 16$

11) Factor $x^3 + 8y^3$

12) Factor $10y^2 - 7y - 12$

13) Factor $8x^2 - 28x - 16$

14) Factor $20x^4 - 23x^2 + 6$

15) Factor $10x^3 - 8x^2 + 25x - 20$

16) Factor $4x^3 - x^2 - 4x + 1$

17) Solve $m^2 - 3m = 0$

18) Solve $n^2 = -18 - 9n$

19) Solve $8r^2 + 3r + 2 = 7r^2$

20) Solve $x^2 = 81$

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Extra-credit

21) for each of the following two sequences, determine whether it is geometric, Arithmetic, or neither.

a) $2, -6, 18, -54, \dots$

b) $1, 8, 27, 64, \dots$

22) Find the value(s) of x such that $8xy - 12y + 2x - 3 = 0$ is true for all values of y .

=== End of test