Name: _____

Block: _____

Algebra 2H: Polynomials and Factoring
Group A

There are **10 questions** in this test, each worth **2pts** .

<mark>(In the practice test you have MORE than 10, just to gain more practice!!)</mark>

You have **30 minutes** to complete the test (more if you have accommodations).

=== Start of test

For each of the following questions: factor, solve or simplify as required.

1. Factor $$4x^2 - 9$$	2. Factor $$27x^3 + 8$$
3. Factor $$x^2 - 9x + 18$$	4. Factor $$12x^2 - 7x + 1$$

5. Factor $$15x^2 - x - 6$$	6. Factor $$x^4 - 16$$
7. Factor $$2x^7y - 16xy$$	8. Simplify $$(2x + 3y)^2$$
9. Simplify $$(3x^2 - 2)^2$$	10. Solve $$4x^2 + 12x + 9 = 0$$

11. Solve	12. Factor
$$2x^2 + x = 3$$	$$x^4 - 16$$
13. Factor	14. Simplify
$$4x^6 + 32$$	$$(2x + 5)(4x^2 - 10x + 25)$$
15. Solve	16. Solve
$$x(x - 1)(2x + 3) = 0$$	$$x^2 + 2x = 0$$

===

17. (Credit to Derron)

A friend describe a math trick he discovered: If I take a number and multiply it by itself, I get the number squared. If I then multiple 1 less then the original number by 1 more than the original number, I get one less than the original number squared.

a. Show that this trick works if the original number I choose is 5.

b. Explain why this trick works for any number.

c. Would this trick work if the original number is negative?

d. Would this trick work if the original number is a fraction?

18. Simplify

$$\left(\frac{1}{2}x^3\right)^3 \cdot \left(\frac{2y^2}{x^3}\right)^2$$

19. Simplify

$$\left(\frac{1}{2}x^3\right)^3 \div \left(\frac{2y^2}{x^3}\right)^2$$

=== End of test