GSE Honors Algebra 1 **Unit 0 Test Review** Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Jimmy is spending twelve less than double the amount of money that Jane spends on groceries. If Jane spends *x* amount of dollars, write an **expression** that represents the amount that Jimmy spends.
2. Ashley is 6 years less than triple her grandfather’s age. What would be the **expression** for this?
3. We are building a pen for our pigs. One side is 4 less than triple the other. Write an expression for the area and perimeter so you know how much fencing to buy for the pigs and how much room they have?
4. **Simplify** the following
	1. (4x3 + 1x - 6) + (x2 + 2x + 5) – (x3 + 4x) b. $(5xy - 4x + 9y^{2}) - (10 - 18x + 9xy) $

1. **Multiply** the following polynomials.
	1. $(4xy-1)(5xy+4)$ b. $x^{4}(5x^{4}-10x^{3}+x^{2}-9x+14)$
2. Calculate the **area** and **perimeter** of the rectangle

Area: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Perimeter: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

$$3x^{2}-7$$



$$5x^{2}+4x$$

1. What is the coefficient in the term 5x4? \_\_\_\_\_\_\_\_\_ What does **coefficient** mean? (explain in words)
2. How many terms does the expression have: 3x4 + 2x3 - 5xy + 4

What is a term? How are terms split up?

1. a. Simplify $\sqrt{6x}$ (3x- $\sqrt{3}$) b. Simplify $(4x-2\sqrt{3})(7+6\sqrt{3x})$
2. Simplify the following: $-3x\sqrt{990x^{4}y^{7}z^{20}}$
3. A rectangle has a total perimeter of $\sqrt{72}$ and a side length of $\sqrt{12}$. What is the length of the other side?
4. Find the perimeter of the following:

$$\sqrt{9}- 2\sqrt{12}$$

1. Your grandmother has bought a rectangular table that has side lengths of $3\sqrt{18} $on two sides and $2\sqrt{24}$ on the other two sides. What would be the **area** of the table your grandmother has?

$7\sqrt{3}$ - 4$\sqrt{6}$

$$\sqrt{5}+ \sqrt{24}$$

1. Your pool is filling up at a rate of 1200 gallons/hour. What would be the speed in milliliters/second?

(1 gallon = 3.785 liters)

1. You are driving at a speed of 90 meters/day. What is your speed in inches/min? (3.3 ft = 1 m, 12 in = 1 ft)
2. The approximate distance from EJCHS to Walmart is 18 miles. What would be the distance hectometers?

(1 km = 0.621 miles)

1. The distance that Mrs. Forrester walks around the classroom is 14,500 feet per year. What is the distance in km per hour? (2.54 cm = 1 in)
2. State if the value is rational or irrational: $\sqrt{121}-\sqrt{25}+4$
	1. Rational or irrational? (**circle** **one**)
	2. Explain (how do you know)
3. State if the value is rational or irrational

4$\sqrt{8}$ + 7 - 5$\sqrt{2}$

1. Rational or Irrational? (**circle** **one**)
2. Explain (how do you know) :
3. The **product** of two **rational** numbers is **always / sometimes / never** rational. (circle the best choice)
	1. Show 2 examples of this with numbers
4. The **sum** of two **irrational** numbers is **always / sometimes / never** irrational. (circle the best choice)
	1. Show 2 examples of this with numbers
5. Use the formula given: $d=\frac{v^{2}}{t}$ where velocity, *v*, is cm/sec and time, *t*, is sec. What are the units for d?