**Unit 3: Radical and Exponential Functions**

**By the end of the unit students will be able to:**

* Extend the properties of exponents to rational exponents.
* Solve Systems involving lines, parabolas, and circles.

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| **Day** | **Date** | **Lesson** | **Assignment** | **Check** |
| 1 | Thursday  Feb. 16th | Monomial Rules / Properties of Exponents | Homework 3-1 |  |
| 2 | Friday  Feb. 17th | Adding, Subtracting, & Multiplying Polynomials | Homework 3-2 |  |
| 3 | Monday  Feb. 20th | **Quiz** | TBD |  |
| 4 | Tuesday  Feb. 21st | Systems of Lines & Parabolas | Homework 3-3 |  |
| 5 | Wednesday  Feb. 22nd | Systems of Lines and Circles | Homework 3-4 |  |
| 6 | Thursday  Feb. 23rd | Solving Radical Equations | Homework 3-5 |  |
| 7 | Friday  Feb. 24th | Solving Radical Equations | Homework 3-6 |  |
| 8 | Monday  Feb. 27th | Types of Variation | Homework 3-7 |  |
| 9 | Tuesday  Feb. 28th | Systems involving Inverse Variation | Hondout |  |
| 10 | Wednesday  Mar. 1st | Review | Review Sheet |  |
| 11 | Thursday  Mar. 2nd | Review for Test |  |  |
| 12 | Friday  Mar. 3rd | Unit 3 Test | Unit 4 Placemat |  |

**Homework 3-1**



**Homework 3-2**

1. 2.

3. 4.

5. 6.

7. 8.

9. 10.

11. 12.

13. 14.

15. 16.

**Homework 3-3 Intersection of lines and Parabolas**

**Graph each of the following**

**1.**  and y = -2x + 4 **2.** x2 + 3x + 2 and y = x + 2

Solve the system of equations Algebraically:

3. y = x2 – 4x + 9 4. y = -x2 + 2x - 4

y = 2x + 1 x + y = -4

5. Each year, Heritage’s Homecoming committee organizes a dance. Based on previous years, the organizers decided that the Income from ticket sales, I(t) is related to ticket price *t* by the equation *I(t) = 400t – 40t2. Cost* C(t) of operating the dance is also related to ticket price *t* by the equation *C(t) = 400 – 40t.*

* 1. What ticket price(s) would generate the greatest income? What is the greatest income possible? Explain how you obtained the value you got.

Ticket price(s) \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Income \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* 1. For what ticket price(s) would the operating costs be equal to the income from ticket sales? Explain how you obtained the answer.

**HW 3-4 Intersection of Circles and Lines**

**On separate paper Solve Algebraically**

1. x2 + y2 = 50 and y = x 2. x2 + y2 = 26 and 5y = x

**Circle the correct answer.**

3. x2 + y2 = 2 and y = x – 2 4. x2 + y2 = 25 and 2x – y = 5 5. y = 2x2 + 2x + 3 and y – x = 3

a) (2, -2) and (1, -1) a) (4, 3) a) (0, 3) and (3, 0)

b) (-1, 1) and (1, -1) b) (-5, 0) and (4, 3) b) (0, 3) and (-0.5, 2.5)

c) (-1, 1) c) (0, -5) and (4, 3) c) (0.5, 2.5) and (3, 0)

d) (1, -1) d) (0, -5) d) (-0.5, 2.5) and (-3, 0)

**Homework 3-5**

|  |  |
| --- | --- |
| 1.) | 2.) |
| *3.)* | *4.)* |
| *5.)* | *6.)* |
| *7.)* | *8.)* |
| *9.)* | *10.)* |