

## Honors Algebra II

### Unit 1B: Quadratics Revisited-Solving Quadratics

Date	Topic/Classwork	Assignment
August 31	<b>Factoring Review</b> <i>a=1, difference of squares notes</i>	Factoring Trinomials (a=1) WS Factoring Special Cases WS Factoring a = 1 KEY and difference of squares KEY  Pages 1-4
Sept 1	<b>Factoring by Grouping</b> <i>Notes</i>	Factoring by Grouping worksheet Factoring by grouping KEY Pages 5-6
Sept 2	<b>Work Day</b>	
Sept 3	<b>Factoring A Sum/Difference of Cubes</b> <i>Notes</i>	Factoring A Sum/Difference of Cubes WS Factoring A Sum/Difference of Cubes KEY Pages 7-8
Sept 4	<b>Factoring review</b> <i>a&gt;1 notes</i>	Factoring Trinomials (a>1) Factoring a>1 KEY and more factoring review Factoring a>1 KEY Pages 9-10
Sept 7	<b>Factoring review, a &gt; 1</b> <i>More factoring a &gt; 1</i>	Algebra II Factoring Worksheet Extra Factoring WS2 Mixed Factoring worksheet KEY Pages 11 - 12
Sept 8	<b>Factoring with complex solutions</b> <i>Complex Factoring</i>	Factoring Sum of Squares WS Factoring Complex Solutions NOTES and HW KEY Pages 13-14
Sept 9	<b>Work Day</b>	
Sept 10	<b>Quiz on Factoring</b> <i>Solve by Factoring notes</i>	Solve by Factoring WS QUIZ and Solve by Factoring KEY Pages 15-16
Sept 11	<b>Completing the square</b> <i>Completing the Square WS</i> <i>Solving Equations by Completing the Square</i> <i>WS 1</i>	Completing the Square WS Solving Equations by Completing the Square WS 1 Completing the Square KEY Solving the Equations by Completing the Square KEY Worked Out Solutions Pages 17-19

Sept 14	<b>Completing the square</b> <i>Solving Equations by Completing the Square</i> <i>WS 1</i>	Solve Quadratic Equations by Completing the Square WS 2 Completing the Square KEY Worked Out Solutions Pages 20-21
Sept 15	<b>Quadratic formula</b> <i>Using the Quadratic Formula 1</i>	Using the Quadratic Formula 2 Quadratic Formula 1 KEY, Quadratic Formula 2 KEY Pages 22-23
Sept 16	<b>Work Day</b>	
Sept 17	<b>Look at graphs to determine solutions and More with Quadratic Formula</b> <i>Function Worksheet</i>	The Discriminant WS Pages 24-26
Sept 18	<b>Variety of Solving Quadratics</b> <i>Grid Worksheet</i>	Variety of Solving Methods WS 1 KEY Pages 27
Sept 21	<b>Test Review</b>	TEST Review KEY (Use Factoring on questions 1, 3, 4, 5, 19, 22 Use Completing the Square on questions 6, 11, 13, 14, 18 Use Quadratic Formula on questions 2, 7, 12, 15, 16, 17) Pages 28-
Sept 22	<b>TEST</b>	

## Factoring Trinomials (a = 1)

**Factor each completely.**

1)  $b^2 + 8b + 7$

2)  $n^2 - 11n + 10$

3)  $m^2 + m - 90$

4)  $n^2 + 4n - 12$

5)  $n^2 - 10n + 9$

6)  $b^2 + 16b + 64$

7)  $m^2 + 2m - 24$

8)  $x^2 - 4x + 24$

9)  $k^2 - 13k + 40$

10)  $a^2 + 11a + 18$

11)  $n^2 - n - 56$

12)  $n^2 - 5n + 6$

$$13) b^2 - 6b + 8$$

$$14) n^2 + 6n + 8$$

$$15) 2n^2 + 6n - 108$$

$$16) 5n^2 + 10n + 20$$

$$17) 2k^2 + 22k + 60$$

$$18) a^2 - a - 90$$

$$19) p^2 + 11p + 10$$

$$20) 5v^2 - 30v + 40$$

$$21) 2p^2 + 2p - 4$$

$$22) 4v^2 - 4v - 8$$

$$23) x^2 - 15x + 50$$

$$24) v^2 - 7v + 10$$

$$25) p^2 + 3p - 18$$

$$26) 6v^2 + 66v + 60$$

## Factoring Special Cases

**Factor each completely.**

1)  $16n^2 - 9$

2)  $4m^2 - 25$

3)  $16b^2 - 40b + 25$

4)  $4x^2 - 4x + 1$

5)  $9x^2 - 1$

6)  $n^2 - 25$

7)  $n^4 - 100$

8)  $a^4 - 9$

9)  $k^4 - 36$

10)  $n^4 - 49$

$$11) 98n^2 - 200$$

$$12) 3 + 6b + 3b^2$$

$$13) 400 - 36v^2$$

$$14) 100x^2 + 180x + 81$$

$$15) 10n^2 + 100n + 250$$

$$16) 49n^2 - 56n + 16$$

$$17) 49x^2 - 100$$

$$18) 1 - r^2$$

$$19) 10p^3 - 1960p$$

$$20) 343b^2 - 7b^4$$

$$21) 81v^4 - 900v^2$$

$$22) 200m^4 + 80m^3 + 8m^2$$

## Factoring By Grouping

Factor each completely.

1)  $8r^3 - 64r^2 + r - 8$

2)  $12p^3 - 21p^2 + 28p - 49$

3)  $12x^3 + 2x^2 - 30x - 5$

4)  $6v^3 - 16v^2 + 21v - 56$

5)  $63n^3 + 54n^2 - 105n - 90$

6)  $21k^3 - 84k^2 + 15k - 60$

7)  $25v^3 + 5v^2 + 30v + 6$

8)  $105n^3 + 175n^2 - 75n - 125$

9)  $96n^3 - 84n^2 + 112n - 98$

10)  $28v^3 + 16v^2 - 21v - 12$

11)  $4v^3 - 12v^2 - 5v + 15$

12)  $49x^3 - 35x^2 + 56x - 40$

13)  $24p^3 + 15p^2 - 56p - 35$

14)  $24r^3 - 64r^2 - 21r + 56$

$$15) 56xw + 49xk^2 - 24yw - 21yk^2$$

$$16) 42mc + 36md - 7n^2c - 6n^2d$$

$$17) 12x^2u + 3x^2v + 28yu + 7yv$$

$$18) 40ac^2 + 25ak^2 + 32bc^2 + 20bk^2$$

$$19) 12bc - 4bd - 15xc + 5xd$$

$$20) 16mn - 4m^2 + 28n - 7m$$

$$21) 56xy - 35x + 16ry - 10r$$

$$22) 21xy + 15x + 35ry + 25r$$

$$23) 5a^2z - 4a^2c + 15xz - 12xc$$

$$24) 4xy + 6 - x - 24y$$

$$25) 21xy - 12b^2 + 14xb - 18by$$

$$26) 9mz - 4nc + 3mc - 12nz$$

$$27) 28xy + 25 + 35x + 20y$$

$$28) 30uv + 30u + 36u^2 + 25v$$



## Factoring A Sum/Difference of Cubes

Factor each completely.

1)  $x^3 + 125$

2)  $a^3 + 64$

3)  $x^3 - 64$

4)  $u^3 + 8$

5)  $x^3 - 27$

6)  $125 - x^3$

7)  $1 - a^3$

8)  $a^3 + 125$

9)  $x^3 + 27$

10)  $x^3 + 1$

11)  $8x^3 + 27$

12)  $-27u^3 + 125$

$$13) -a^3 - 8$$

$$14) 250x^4 + 128x$$

$$15) 648a + 1029a^4$$

$$16) 8a^3 + 125$$

$$17) 64x^3 + 1$$

$$18) 8x^4 + x$$

$$19) 343m^3 + 64n^3$$

$$20) m^3 + 8n^3$$

$$21) a^3 + 343b^3$$

$$22) x^3 - 216y^3$$

$$23) 1029yx^3 + 24y^4$$

$$24) m^3 + 64n^3$$

Factoring Trinomials ( $a > 1$ )**Factor each completely.**

1)  $3p^2 - 2p - 5$

2)  $2n^2 + 3n - 9$

3)  $3n^2 - 8n + 4$

4)  $5n^2 + 19n + 12$

5)  $2v^2 + 11v + 5$

6)  $2n^2 + 5n + 2$

7)  $7a^2 + 53a + 28$

8)  $9k^2 + 66k + 21$

$$9) 15n^2 - 27n - 6$$

$$10) 5x^2 - 18x + 9$$

$$11) 4n^2 - 15n - 25$$

$$12) 4x^2 - 35x + 49$$

$$13) 4n^2 - 17n + 4$$

$$14) 6x^2 + 7x - 49$$

$$15) 6x^2 + 37x + 6$$

$$16) -6a^2 - 25a - 25$$

$$17) 6n^2 + 5n - 6$$

$$18) 16b^2 + 60b - 100$$

## Extra Factoring WS 2

Name \_\_\_\_\_

Factor the expression.

1.  $x^2 + 4x - 21$

14.  $15x^2 - 14x + 3$

2.  $x^4 - 81$

15.  $15y^2 + 19y - 10$

3.  $x^2 + 8x + 15$

16.  $x^2 + 16x + 64$

4.  $3x^3 + 25x^2 + 52x$

17.  $2x^2 - 8$

5.  $-27x^3 + 343y^3$

18.  $9x^2 - 1$

6.  $x^2 - 10x + 24$

19.  $4x^2 + 4x + 1$

7.  $1 - 16y^4$

20.  $9x^2 - 12x + 4$

8.  $2x^2 - 5x - 3$

21.  $m^4 + 8m^3 + 8m^2 + 64m$

9.  $3x^2 - x - 2$

22.  $x^6 - y^6$

10.  $3x^2 + 7x + 2$

23.  $4x^2 + 14x + 6$

11.  $2x^2 + 5x + 3$

24.  $6x^2 - 33x + 15$

12.  $-1 + x^3$

25.  $45x^2 + 30x + 5$

13.  $6x^2 - 13x + 2$

26.  $12a^3b^2 - 6a^2b + 4a^2b^2 - 2ab$

Algebra II  
Factoring Worksheet #1  
Factor all of the  
polynomials completely.

1.  $5x^2 + 8x + 3$

2.  $5x^2 - 2x - 3$

3.  $5x^2 - 8x + 3$

4.  $5x^2 + 2x - 3$

5.  $x^2 + 6x - 7$

6.  $x^2 - 6x - 7$

7.  $x^2 - 8x + 7$

8.  $7x^2 + 10x + 3$

9.  $7x^2 - 10x + 3$

10.  $7x^2 + 4x - 3$

11.  $7x^2 + 22x + 3$

12.  $7x^2 + 20x - 3$

13.  $7x^2 - 22x + 3$

14.  $9x^2 - 4$

15.  $9x^2 - 12x + 4$

16.  $9x^2 + 12x + 4$

17.  $x^2 + 8x - 9$

18.  $x^2 - 10x + 9$

19.  $x^2 - 8x - 9$

20.  $x^2 - 9$

21.  $x^2 - 6x + 9$

22.  $x^2 + 6x + 9$

23.  $2x^2 + 7x + 5$

24.  $2x^2 + 3x - 5$

25.  $2x^2 - 7x + 5$

26.  $2x^2 - 9x - 5$

27.  $2x^2 - 11x + 5$

28.  $2x^2 + 9x - 5$

29.  $x^2 - 16$

30.  $x^2 + 8x + 16$

31.  $x^2 - 8x + 16$

32.  $2x^2 - 16x + 32$

# Complex Factoring

Factoring Sum of Squares (review-remember)

$$x^2 - y^2 = (x+y)(x-y) = x^2 - xy + xy - y^2 = x^2 - y^2 \checkmark$$

$$\begin{aligned} x^2 + y^2 &= x^2 - -1y^2 = x^2 - y^2 \cdot i^2 = (x+yi)(x-yi) \\ &= x^2 - xyi + xyi - y^2 \cdot i^2 \\ &= x^2 + y^2 \checkmark \end{aligned}$$

ex:  $x^2 + 4$

$$x^2 - -1 \cdot 4 = x^2 - 4i^2 = (x+2i)(x-2i)$$

ex:  $4x^2 + 25 = 4x^2 - -1 \cdot 25 = (2x+5i)(2x-5i)$

$$\begin{aligned} \sqrt{4x^2} &= 2x & \sqrt{i^2} &= i \\ \sqrt{25} &= 5 \end{aligned}$$

extra  
examples  $x^2 + 36$

$$(x+6i)(x-6i)$$

$$9x^2 + 64$$

$$(3x+8i)(3x-8i)$$

$$x^2 + 1$$

$$(x+i)(x-i)$$

# Factoring Sum of Squares WS

Name \_\_\_\_\_

Factor each of the following completely.

①  $x^2 + 100$

②  $x^2 + 81$

③  $x^2 + 16$

④  $2x^2 + 98$

⑤  $3x^2 + 108$

⑥  $121 + x^2$

⑦  $16x^2 + 121$

⑧  $9x^2 + 225$

⑨  $20x^2 + 405$

⑩  $242 + 32x^2$

⑪ If one factor of a real ~~polynomial~~ <sup>polynomial</sup> is  $(2x - 3i)$ , what is the polynomial?

⑫ Find a polynomial function with real coefficients given  $(7+i)$  is a factor.



## Solving Quadratic Equations By Factoring

Solve each equation by factoring.

1)  $(3n - 2)(4n + 1) = 0$

2)  $m(m - 3) = 0$

3)  $(5n - 1)(n + 1) = 0$

4)  $(n + 2)(2n + 5) = 0$

5)  $3k^2 + 72 = 33k$

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

7)  $7v^2 - 42 = -35v$

8)  $k^2 = -4k - 4$

9)  $-2v^2 - v + 12 = -3v^2 + 6v$

10)  $-4n^2 + 6n - 16 = -5n^2$

$$11) 8r^2 + 3r + 2 = 7r^2$$

$$12) b^2 + b = 2$$

$$13) 10n^2 - 35 = 65n$$

$$14) 3x^2 - 8x = 16$$

$$15) 16n^2 - 114n = -14$$

$$16) 28n^2 = -96 - 184n$$

$$17) 7a^2 + 32 = 7 - 40a$$

$$18) 42x^2 - 69x + 20 = 7x^2 - 8$$

**Critical thinking questions. True/False.**

19) If a quadratic equation can be factored and each factor contains only real numbers then there cannot be an imaginary solution.

20) If a quadratic equation cannot be factored then it will have at least one imaginary solution.

## Completing the Square

Find the value of  $c$  that completes the square.

1)  $x^2 + 6x + c$

2)  $z^2 - 10z + c$

3)  $x^2 - 34x + c$

4)  $r^2 + 32r + c$

5)  $r^2 - 6r + c$

6)  $r^2 + 20r + c$

7)  $x^2 - 38x + c$

8)  $a^2 + 12a + c$

9)  $x^2 - \frac{25}{13}x + c$

10)  $a^2 - 7a + c$

11)  $z^2 + \frac{11}{8}z + c$

12)  $m^2 + 3m + c$

13)  $m^2 + 40m + c$

14)  $x^2 + 13x + c$

15)  $x^2 - x + c$

16)  $n^2 - \frac{1}{2}n + c$

17)  $a^2 - 8a + c$

18)  $x^2 + \frac{7}{13}x + c$

## Solving Equations by Completing the Square

Solve each equation by completing the square.

1)  $a^2 + 2a - 3 = 0$

2)  $a^2 - 2a - 8 = 0$

3)  $p^2 + 16p - 22 = 0$

4)  $k^2 + 8k + 12 = 0$

5)  $r^2 + 2r - 33 = 0$

6)  $a^2 - 2a - 48 = 0$

7)  $m^2 - 12m + 26 = 0$

8)  $x^2 + 12x + 20 = 0$

9)  $k^2 - 8k - 48 = 0$

10)  $p^2 + 2p - 63 = 0$

11)  $m^2 + 2m - 48 = -6$

12)  $p^2 - 8p + 21 = 6$

$$13) m^2 + 10m + 14 = -7$$

$$14) v^2 - 2v = 3$$

$$15) 5v^2 - 21 = 10v$$

$$16) 4v^2 + 16v = 65$$

$$17) 7b^2 - 14b - 56 = 0$$

$$18) 2n^2 + 12n + 10 = 0$$

$$19) n^2 + 13n + 22 = 7$$

$$20) 5n^2 + 19n - 68 = -2$$

$$21) r^2 - 9r - 38 = -9$$

$$22) 3x^2 + 20x + 36 = 4$$

$$23) x^2 + 7x - 45 = 7$$

$$24) n^2 + 19n + 66 = 6$$

## Solving Quadratic Equations By Completing the Square Date \_\_\_\_\_ Period \_\_\_\_\_

Solve each equation by completing the square.

1)  $p^2 + 14p - 38 = 0$

2)  $v^2 + 6v - 59 = 0$

3)  $a^2 + 14a - 51 = 0$

4)  $x^2 - 12x + 11 = 0$

5)  $x^2 + 6x + 8 = 0$

6)  $n^2 - 2n - 3 = 0$

7)  $x^2 + 14x - 15 = 0$

8)  $k^2 - 12k + 23 = 0$

9)  $r^2 - 4r - 91 = 7$

10)  $x^2 - 10x + 26 = 8$

11)  $k^2 - 4k + 1 = -5$

12)  $b^2 + 2b = -20$

$$13) v^2 - 6v = -91$$

$$14) n^2 = 18n + 40$$

$$15) 5k^2 = 60 - 20k$$

$$16) 6x^2 - 48 = -12x$$

$$17) 8x^2 + 16x = 42$$

$$18) 9n^2 + 79 = -18n$$

$$19) 2a^2 = -6 + 8a$$

$$20) 2x^2 - 5x + 67 = 0$$

$$21) 4n^2 + 4n + 36 = 0$$

$$22) 7k^2 - 16k + 100 = 0$$

$$23) 10p^2 + 4p + 77 = 9$$

$$24) 3x^2 = -4 + 8x$$

Using the Quadratic Formula 1

Solve each equation with the quadratic formula.

1)  $m^2 - 5m - 14 = 0$

2)  $b^2 - 4b + 4 = 0$

3)  $2m^2 + 2m - 12 = 0$

4)  $2x^2 - 3x - 5 = 0$

5)  $x^2 + 4x + 3 = 0$

6)  $2x^2 + 3x - 20 = 0$

7)  $4b^2 + 8b + 7 = 4$

8)  $2m^2 - 7m - 13 = -10$



## Using the Quadratic Formula 2

Solve each equation with the quadratic formula.

1)  $v^2 + 2v - 8 = 0$

2)  $k^2 + 5k - 6 = 0$

3)  $2v^2 - 5v + 3 = 0$

4)  $2a^2 - a - 13 = 2$

5)  $2n^2 - n - 4 = 2$

6)  $b^2 - 4b - 14 = -2$

7)  $8n^2 - 4n = 18$

8)  $8a^2 + 6a = -5$

9)  $10x^2 + 9 = x$

10)  $n^2 = 9n - 20$

11)  $3a^2 = 6a - 3$

12)  $x^2 = -3x + 40$

13)  $9x^2 - 11 = 6x$

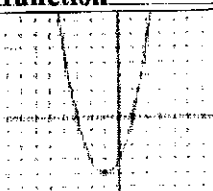
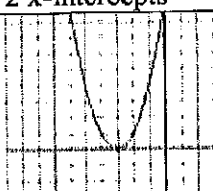
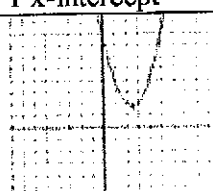
14)  $4a^2 - 8 = a$

15)  $14m^2 + 1 = 6m^2 + 7m$

16)  $4x^2 + 4x - 8 = 1$

## Using the Discriminant

The discriminant of a quadratic equation  $ax^2 + bx + c = 0$ , is  $b^2 - 4ac$ . The discriminant is found inside the square root of the quadratic formula. The discriminant tells us the number and nature of the roots of the quadratic.

If the discriminant is:	Number and Nature	number of x-intercepts of the graph of the related function
Positive	two real roots	 2 x-intercepts
Zero	one real root (a double root)	 1 x-intercept
Negative	two imaginary roots/ no real roots	 0 x-intercepts

In the following examples you will use the discriminant to determine the number and nature of the roots. Find the number of x-intercepts of the parent graph.

**Example 1: Find the discriminant to determine the number and nature of the roots of the equation  $3x^2 - 2x + 5 = -12$**

Rewrite the problem.

Write in standard form.

$$\begin{array}{r}
 3x^2 - 2x + 5 = -12 \\
 \phantom{3x^2 - 2x + 5} + 12 \phantom{=} + 12 \\
 \hline
 3x^2 - 2x + 5 = 0
 \end{array}$$

Identify  $a$ ,  $b$ , and  $c$ .

Substitute into discriminant.

$$a = 3, b = -2, c = 5$$

$$b^2 - 4ac$$

$$(3)^2 - 4(-2)(5)$$

$$9 + 40$$

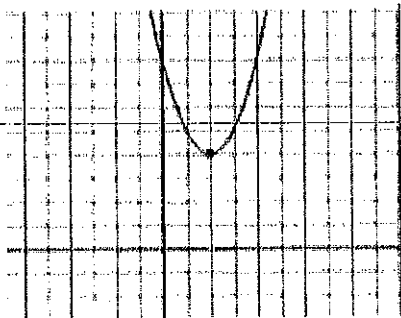
$$49$$

The discriminant is positive therefore the equation has two real solutions. There are 2 x-intercepts.

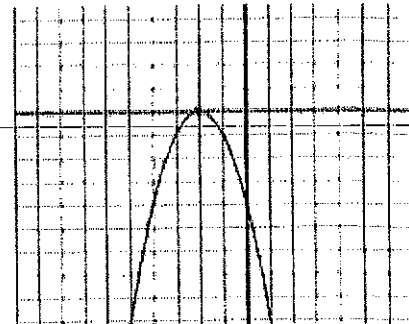
**II. Practice using the discriminant.**

**Given the graph below determine a) the sign of the discriminant b) the number and nature of the roots.**

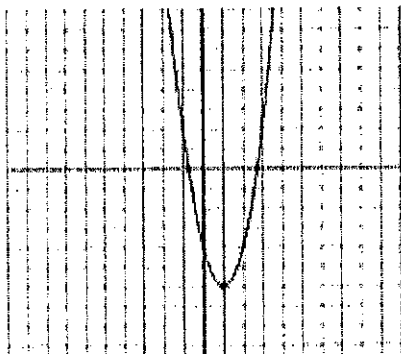
1.



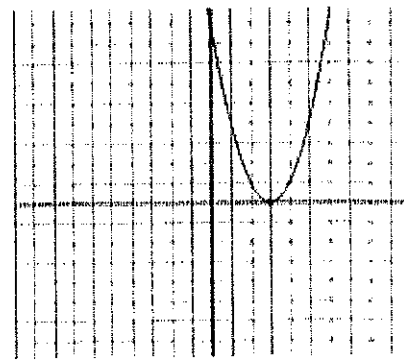
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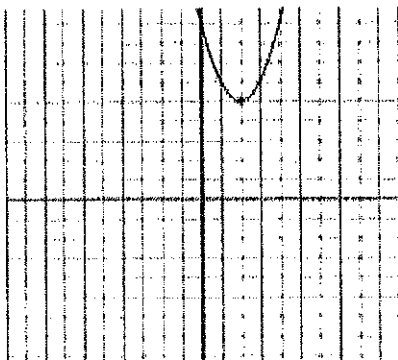
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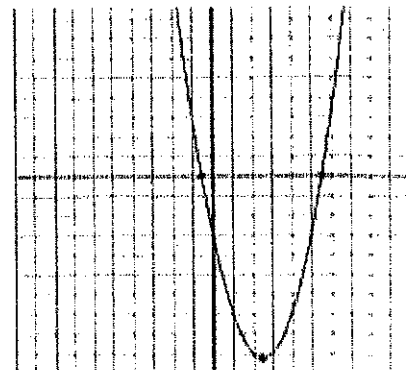
4.



5.



6.



Find the discriminant to determine the number and nature of the roots of the equation.

7.  $x^2 + 6x + 4 = 0$

9.  $2x^2 - 3x + 2 = 0$

11.  $3x + 7 = -5x^2 - 4$

13.  $25x^2 - 15x - 64 = 5x - 10$

8.  $x^2 - 5x - 34 = 0$

10.  $3x^2 - 6x + 2 = 0$

12.  $-3x^2 + 17x - 2 = 3$

Find the discriminant to determine the number of x-intercepts of the function.

14.  $f(x) = 3x^2 - 4x + 2$

16.  $f(x) = x^2 - 7x + 6$

18.  $f(x) = x^2 - 3x + 4$

20.  $f(x) = 4x^2 - 28x + 49$

15.  $f(x) = -2x^2 + 6x - 8$

17.  $f(x) = 9x^2 + 24x + 16$

19.  $f(x) = -x^2 - 4$

### III. Challenge Problems

21. Find all the values of  $a$  such that  $ax^2 + 3x + 5 = 0$  has two real roots.
22. Find all the values of  $a$  such that  $ax^2 + 48x + 64 = 0$  has one real root (a double root).
23. Find all the values of  $a$  such that  $ax^2 + 3x - 6 = 0$  has two imaginary roots.
24. Find all the values of  $c$  such that  $2x^2 - 6x + c = 0$  has two imaginary roots.
25. Find all the values of  $c$  such that  $-4x^2 + 8x + c = 0$  has two real roots.
26. Assuming  $b \neq 0$ , does the sign of  $b$  affect the value of the discriminant?

**Directions:** For each problem, solve the quadratic by factoring (if possible), completing the square and by using the quadratic formula.

<i>Quadratic Equation</i>	<i>Solve by Factoring</i>	<i>Solve by Completing the Square</i>	<i>Solve by using the Quadratic Formula</i>
$x^2 - 3 = 2v$			
$2x^2 = -12x - 10$			
$x^2 - 2x - 48 = 0$			
$2x^2 + 4x = x^2 + 2x + 63$			
$3x^2 + 36 = 4 - 20x$			

Rational Exponents REVIEW

Name \_\_\_\_\_

(NO CALCULATOR)

Students will extend the properties of exponents to rational exponents. \_\_\_\_\_ / 30 points

True or False: Write the entire word. (1 point each)

1.  $3^{-2} = -9$

2.  $2^4 \cdot 2^5 = 2^9$

3.  $\frac{2}{x^{-3}} = 2x^3$

4.  $\left(\frac{4}{a}\right)^{-1} = -4a$

5.  $(a^9)^3 = a^{12}$

6.  $\frac{x^2}{x^{-2}} = 1$

Rewrite using rational exponent notation. (1 point each)

7.  $\sqrt{x^3}$

8.  $\sqrt[3]{2x^2y^4}$

Rewrite the expression using simplified radical notation. (1 point each)

9.  $x^{\frac{3}{2}}$

10.  $a^{\frac{1}{2}}b^{\frac{1}{2}}$

Evaluate each expression. (2 points each)

11.  $27^{2/3}$

12.  $\left(\frac{25}{64}\right)^{1/2}$

13.  $64^{-1/3}$

14.  $7^{\frac{1}{4}} \cdot 7^{\frac{7}{4}}$

Simplify each expression. Write each answer in the form of the original expression. (2 points each)

15.  $\sqrt[4]{32x^5y^3}$

16.  $\sqrt[4]{m^3}$

17.  $(x^3)^{5/12}$

18.  $\sqrt[3]{x} \cdot \sqrt[6]{x}$

19.  $\left(\frac{x^{-6}y^9}{27}\right)^{-1/3}$

20.  $\frac{y}{\frac{2}{y^4}}$

Unit 1B: Test Review Part 1

Ways to solve an equation with an  $x^2$  in it:

Solve each equation.

1.  $x^2 - 5x = -6$

2.  $2x^2 + x = 6$

Unit 1B – Solving Quadratic Equations  
Honors Algebra 2

3.  $8x^2 + 18x = 5$

4.  $48 - 3y^2 = 0$

5.  $8^2 + 16 = 25$

6.  $3x^2 + 12x + 12 = 0$

Unit 1B – Solving Quadratic Equations  
Honors Algebra 2

7.  $-2t^2 + 10 = -6$

8.  $(2x + 5)^2 = 27$

9.  $(4x - 1)^2 = 81$

10.  $3(2x + 3)^2 = 45$

Unit 1B - Solving Quadratic Equations  
Honors Algebra 2

$$11. x^2 + 10x - 1 = 0$$

$$12. x^2 - 14x = 9$$

$$13. x^2 - 10x = -41$$

$$14. 14x^2 + 28x = 9$$

Unit 1B - Solving Quadratic Equations  
Honors Algebra 2

$$15. 2x^2 + 32x - 10 = 6$$

$$16. 4x^2 - 3x + 9 = 0$$

$$17. 8x^2 + x - 1 = 0$$

$$18. 3x^2 - 9x + 2 = 7$$