QUADRATICS

Day 1 Quadratic formula.notebook







Oct 23-7:39 AM



Oct 23-7:39 AM

July 07, 2010



6-2

Day 1 Quadratic formula.notebook



Oct 23-7:39 AM



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Name_____ Day 1 Quadratic formula Class work / Homework $X = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

2) X²-10X+13=0

4) $2X^{2}+X=5$

1) X²-12X+29=0

5) 4X²+4X=39

6) 3X²-5=0

3) $X^{2}+3=7X$

7) X(X+8)=34

8) 3X(X-2)=1

9) $3X^2=2(X+2)$

10)
$$\frac{X-2}{X+2} = \frac{1}{X-3}$$

6 - 4

Name: _____ Day 2 Class work

1) The solution of the quadratic equation $2x^2 - x - 14 = 0$ is A) $\frac{-1 \pm \sqrt{111}}{2}$ B) $\frac{-1 \pm \sqrt{113}}{2}$ C) $\frac{1 \pm \sqrt{113}}{4}$ D) $\frac{1 \pm \sqrt{111}}{4}$

2) Which expression is a solution for the equation
$$2x^2 - x = 7$$
?
A) $\frac{-1 \pm \sqrt{57}}{2}$ B) $\frac{1 \pm \sqrt{57}}{4}$ C) $\frac{1 \pm \sqrt{57}}{2}$ D) $\frac{-1 \pm \sqrt{57}}{4}$

3) The solution to the quadratic equation $2x^2 + 5x - 1 = 0$ is A) $\frac{-5 \pm \sqrt{33}}{4}$ B) $\frac{5 \pm \sqrt{33}}{4}$ C) $\frac{5 \pm \sqrt{17}}{4}$ D) $\frac{-5 \pm \sqrt{17}}{4}$

4) What is the solution set of the equation $x^2 - 4x - 1 = 0$? A) $\{2 \pm \sqrt{3}\}$ B) $\{2 \pm \sqrt{5}\}$ C) $\{4 \pm \sqrt{5}\}$ D) $\{4 \pm \sqrt{12}\}$ 5) Find the roots of the equation $x^2 - 8x + 2 = 0$ to the nearest hundredth. [Only an algebraic solution will be accepted.]

6) (a) Find the values of x to the nearest hundredth: $\frac{1}{x} = \frac{x+2}{2x+3}$

(b) Solve for x in simplest radical form: $\frac{x^2+2x+4}{x} = \frac{2x}{1}$

7) (a) Solve for x and express the answer in radical form.

$$\frac{1}{x+1} = x - 4$$

(b) Between which two consecutive integers does the positive root of this equation lie?



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Nov 5-1:34 PM

Name

Day 3 Classwork/Homework

1) X²-8X+12=0

2) X²-4X-12=0

3) $X^2 + 5x - 6 = 0$

4) $X^2 + 2x + 1 = 0$

5) $X^2 + 3x - 10 = 0$

6) $X^2 - 4X + -21 = 0$

 $7)X^2-5X-4=0$

8) $X^2 - 3X + 2 = 0$

9) $X^{2}+5X - 14 = 0$

 $10) X^2 - 11X + 30 = 0$



6-11

9) X ² +8X-5=0	10) X^{2} +6X-8=0
11) X^2 +2X-1=0	12) $X^{2}+6X+8=0$
$13) X^{2}-6X+8=0$	14) $X^{2}+12X-7=0$
15) X^{2} +10X-1=0	16) $X^{2}+6X+7=0$

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When the discriminant $b^2 - 4ac$ is:	The roots of the equation are:	The number of x-intercepts of the function is	
> 0 and a perfect square	real, rational, and unequal	2	
> 0 and not a perfect square	real, Irrational, and unequal	2	
= 0	real, rational, and equal	1	
< 0	not real numbers	0	
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The discriminant : 2 ² - 4 • 1 • 1 = 4 - 4	for this equation is = 0	in Meleschieften	
Since the <u>discrimi</u>	nant is zero, there should	d be 1 real, rational, o	qual solution to
his equation.	When the discriminant $b^1 - 4ac$ is:	The roots of the equation are:	The number of x-intercepts of the function is:
	> 0 and a perfect square	real, rational, and unequal	2
	> 0 and not a perfect square	real, irrational, and unequal	2
and the second	= 0	real, rational, and equal	1
we we was	<0	not real numbers	0
		3 y = x ² y = x ² y = x ² y = (x 0 = (x x = -1)	+ 2x + 1 + 1) ² + 1)(x +1)



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	When the discriminant b ¹ - 4ac is:	The roots of the equation are:	The number of x-intercepts of the function is
· · · · · · · · · · · · · · · · · · ·	> 0 and a perfect square	real, rational, and unequal	2
	> 0 and not a perfect square	real, irrational, and unequal	2
Constanting of the second	= 0	real, rational, and equal	1
1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	<: 0	not real numbers	0
Since the <u>discriminant is</u> rrational, unequal solut	positive, but not a perfect s	quare, there should be	2 real,
Since the <u>discriminant is</u> rrational, unequal solut	positive, but not a perfect s lons.	quare, there should be	2 real,
Since the <u>discriminant is</u> rrational, unequal solut	<u>positive,</u> but not a perfect s ions.	quare, there should be	2 real,
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Name_____ Day 5 Date_____ Homework DETERMINING THE NATURE OF THE ROOTS: b²-4ac

Value of the Discriminant	Nature of the roots of $ax^2+bx+c=0$
b ² -4ac>0	2, real irrational, unequal
Not a perfect square	
b ² -4ac>0	2, real Rational, unequal
Perfect square	
$b^2-4ac=0$	2, real, EQUAL
b ² -4ac<0	2, Imaginary

1) X²-2X-3=0

2) X²-6X+7=0

3) $X^{2}-4X+4=0$

4) $X^{2}-4X+5=0$

5) X²+3X-5=0

6) X²=7X-6

7) X-8=X²-2X

8) $X^{2}+6=3X^{2}+X$

Name	Day 6	Date

Value of the Discriminant	Nature of the roots of $ax^2+bx+c=0$
b ² -4ac>0	2, real irrational, unequal
Not a perfect square	
b ² -4ac>0	2, real Rational, unequal
Perfect square	
$b^2-4ac=0$	2, real, EQUAL
b ² -4ac<0	2, Imaginary

Find the discriminant using b^2 -4ac and state the nature of the roots

1) X²+3X-5=0

2) X²=2X-10

3) $3X^{2}+11X=4$

4) $9X^2 + 4 = 0$

5) X- X²=
$$\frac{1}{4}$$

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

7) $\frac{1}{2}X^2 = X - 2$

8) $\frac{X-2}{2} = \frac{X-1}{X}$

Name

1) X²- 4X-1=0

Date Quadratic review Day 6 Homework For each question do the following: find the discrimint AND the nature of the roots
 Use the quadratic formula to find the roots
 Find the roots by completing the square. 2) $X^2-2X=1$

3) X^2 =-8X-15

4) X^{2} -10X-25=0

Name		Date
	Quadratic review Day 7	
Solve for the roots b	y using Quadratic formula:	
1) $2X^{2}+2=5$	2) $3X^2 = 5X + 4$	3) $2(X^2-3) = X$

Solve by completing	g the square:		
1) $X^{2}+2X-4=0$	2) $\hat{X}^2 = 4X + 12$	3) $X^{2}+3X+2=0$	4) X^{2} -5X-4=0

Find the discriminant and describe the nature of the roots:

1) X^2 -8+12=0 2) 4=X(2-X) 3) 4 X^2 +1=4X 4) 2X-10= X^2



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6-20

. The sum of t	he roots:		afficientes Second	ter an		
$r_1 + r_2 = -b/a$					10 - 10 - 10 - 10 - 10 - 10 - 10 - 10 -	
2. The product	of the roots	(
$\mathbf{r}_1)(\mathbf{r}_2) = \mathbf{c}/\mathbf{a}$	an an tha an taon an Alaithar an taon an taonachtar an taon			Surger See		

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If the sum and the product of the roots are known, then the quadratic equation can be written as: $x^2 - (sum)x + (product) = 0$

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Name	Date Sum and product of the roots Day 9 homework			
Sum =	$aX^{2}+bX+c=0$ = $\frac{-b}{a}$ Produ	$\operatorname{ct} = \frac{c}{a}$		
1) $2X^2+5X+8=0$	Sum	Product		
2) 2X ² +3X-2=0	Sum	Product		
3) X ² -2X-15	Sum	Product		
4) X ² +9X+5=0	Sum	Product		
5) 2X ² -7X+3=0	Sum	Product		
6) $4X^2 + X - 3 = 0$	Sum	Product		

7) $3X^{2}+9X=2$	Sum	Product
8) $X^{2}+6X=16$	Sum	Product

9) X²=-2X+2

10) 4X²-8X=0

Sum

Product

Sum

Product

Name	Day 10 Sum and product rules	Date	· `.
1) X ² -14X+50=0	Sum=	Product=	
			۰.
2) $3X^2 + X - 2 = 0$	Sum=	Product=	
3) X ² -2X+1=0	Sum=	Product=	× •
Write the quadratic equation wh	ose roots have the indicate	ed sum and product	nn an Allandar an Allandar
1) Sum = 4 Product=3	2) Su	m = -3 Product $= -10$	
3) Sum= 16 Product = -80	4) Su	m = -6 Product $= 8$	
5) Sum = 8 Product = 25	6) Su	$m = -\frac{5}{2}$ Product =1	
7) Sum = -1 Product =	= <u>2</u> 9 8) Su	$m = -\frac{3}{2}$ Product = -1	

Name	Day 11	Date	
Su	m and Product		
Find the sum and product of the roots f	or each equation:		,
1) $2X^2 - 7X + 3 = 0$	-	2) 4X ² -9=0	

Write the quadratic equation given the sum and product:

1) Sum = 12 Product = 20 2) Sum =
$$-\frac{5}{2}$$
 Product =1

Write the quadratic equation given the roots:

1) -3, 5 2) $\frac{1}{2}$, 4 3) $\frac{3}{2}$, 2 4) $-\frac{1}{3}$, $-\frac{2}{3}$

Write the quadratic equation given the roots: 1) $\sqrt{3}, \sqrt{3}$

2) 2+ $\sqrt{3}$, 2- $\sqrt{3}$

3) 1- $\sqrt{7}$, 1+ $\sqrt{7}$

4) $4+2\sqrt{3}$, $4-2\sqrt{3}$

Find the sum and product of the roots for each equation: 1) $4X^2-3X=9$ 2) $8X = 2-X^2$

Write the quadratic equation given the sum and product:

1) Sum = 0 Product = -3 2) Sum =
$$-\frac{9}{25}$$
 Product = $-\frac{2}{5}$

Write the quadratic equation given the roots: (Find the sum and product)

1) -3, 7 2) $-\frac{3}{4}, \frac{3}{8}$ 3) $-\frac{5}{3}, -2$ 4) $-\frac{2}{5}, \frac{1}{25}$

Write the quadratic equation given the roots: (Find the sum and the product) 1) $\sqrt{5}$, $-\sqrt{5}$ 2) $3\sqrt{2}$, $-3\sqrt{2}$

3) 5+ $\sqrt{3}$, 5- $\sqrt{3}$

4) $2+3\sqrt{6}$, $2-3\sqrt{6}$

Date