Alg2T Warm Up Ch 4 Day 3

Which of the following gives all the solutions of $x^2 - x = 12$?

F. -4 and 3
G. -3 and 4
H. -2 and 6
J. 12 and 13
K. 13 only

13. By factoring the left side, the quadratic equation $2t^2 + Kt + 12 = 0$ can be written as $(t - 4)(2t - 3) = 0$. What must be the value of K?

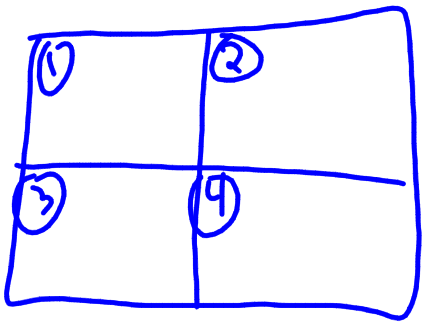
F. -11
G. -8
H. -4
J. -3
K. -2

1) Blue Triangles

-Makes a hexagon

*Please get out homework for me to check.

2)Placemats



Homework Questions?

pg 263
32.) -1/4, 1/4
34.) 0, 3/2
36.) 5/2
38.)1/5, -2/3
40.) -5/2, -1/6
42.) 5/3, 1
44.) 0,1
46.) -1/2, 5/8
48.) -1/3, 2/3
54.) -3/4, 1/6

pg 270
32.) 2, 6

*Move Desks into rows!

http://www.online-stopwatch.com/countdown-clock/full-screen/

How fast can you factor?

Algebra 2 Trig Daily Learning Target Quiz
Factoring and Square Roots Day 3

1.) Solve. $4x^2+5x-6=0$ *Take home DLT	2.) Solve. $12x^2-2x-30=0$
3.) Solve a.) $2(x-3)^2=24$ b.) $\frac{1}{2}x^2-7=9$	4.) What does the zero product property allow me to do?

Alg2T Extra Credit Ch 4 Day 3

The quadratic equation $12x^2 = 28x$ can be solved by factoring. Which of the following states the complete solution?

A. $x = 0$ or $x = 1$
B. $x = 0$ or $x = \frac{7}{3}$
C. $x = 1$ or $x = 1$
D. $x = 1$ or $x = \frac{7}{3}$
E. $x = \frac{7}{3}$ or $x = \frac{7}{3}$

Chapter 4
Quadratic Functions
(4.7) Completing the Square

Perfect Square Trinomial

Examples

*Factor

x^2+4x+4 $(x+2)(x+2)$

$x^2-8x+16$ $(x-4)(x-4)$

$x^2-18x+81$ $(x-9)(x-9)$

$a^2+2ab+b^2=(a+b)^2$

$a^2-2ab+b^2=(a-b)^2$

*What makes these perfect squares?

Solve me by factoring the left side first!

$x^2+8x+16=25$

$(x+4)(x+4)=25$

$\sqrt{(x+4)^2}=\sqrt{25}$

$x+4=5$

$-4\ \ -4$

$x=1$

$x+4=-5$

$-4\ \ -4$

$x=-9$

Solve me by factoring the left side first!

TOYO

$x^2+6x+9=36$

$\sqrt{(x+3)^2}=\pm\sqrt{36}$

$x+3=6$ $\quad x+3=-6$

$-3\ -3 \quad -3\ -3$

$x=3 \quad x=-9$

I. Find the value of c, in order to rewrite the trinomial as a binomial squared.

Examples

ax^2+bx+c

1.) $x^2+14x+c$ 49

$c=\left(\frac{b}{2}\right)^2=\left(\frac{14}{2}\right)^2=49$

$(x+7)^2$

2.) x^2-8x+c

$(x-4)^2$

$c=\left(\frac{-8}{2}\right)^2=16$

3.) x^2+7x+c

$c=\left(\frac{b}{2}\right)^2=\left(\frac{7}{2}\right)^2=\frac{49}{4}$

$\left(x+\frac{7}{2}\right)^2$

Complete the Square

$x^2-26x+c$ 169

"Complete the Square" means finding the "c" value that makes the polynomial a perfect square trinomial...it makes the equation easier to solve if its not factorable!

$c=\left(\frac{b}{2}\right)^2$

$c=\left(\frac{-26}{2}\right)^2$

$c=169$

$(x-13)^2$

II. Use completing the square to solve. Example

1.) $x^2+6x+3=0$

$-3 \quad -3$

$x^2+6x+9=-3+9$

$\sqrt{(x+3)^2}=\sqrt{6}$

$x+3=\sqrt{6}$ $\qquad$ $x+3=-\sqrt{6}$

$-3 \quad -3$ $\qquad$ $-3 \quad -3$

$x=-3+\sqrt{6}$ $\qquad$ $x=-3-\sqrt{6}$

$c=\left(\frac{b}{2}\right)^2$

$c=\left(\frac{6}{2}\right)^2$

$c=9$

II. Use completing the square to solve.TOYO:

2.) $x^2+8x-2=0$

$+2 \quad +2$

$x^2+8x+16=2+16$

$C=\left(\frac{b}{2}\right)^2$

$C=\left(\frac{8}{2}\right)^2$

$C=16$

$\sqrt{(x+4)^2}=\sqrt{18}$

$\sqrt{9}\sqrt{2}$

$x+4=3\sqrt{2}$

$-4 \quad -4$

$x=-4+3\sqrt{2}$

$x+4=-3\sqrt{2}$

$-4 \quad -4$

$x=-4-3\sqrt{2}$

Completing the Square

1) Use addition and subtraction to move the constant term to the right and all other terms to the left .

2) Divide each term in the equation by the coefficient of the x^2 term, unless the coefficient is 1.

3) Determine the coefficient of the x term, divide by two, square it, and add to both sides.

4)Factor the left side as a perfect square trinomial.

5) Take the square root of each side and solve for x.

II. Use completing the square to solve. Example

3.) $\frac{4x^2}{4} - \frac{16x}{4} + \frac{4}{4} = \frac{0}{4}$

$x^2 - 4x + 1 = 0$

$-1 \quad -1$

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

$\sqrt{(x-2)^2} = \sqrt{3}$

$x - 2 = \sqrt{3} \qquad x - 2 = -\sqrt{3}$

$+2 \qquad +2 \quad +2$

$x = 2 + \sqrt{3} \qquad x = 2 - \sqrt{3}$

$c = \left(\frac{b}{2}\right)^2$

$c = \left(\frac{-4}{2}\right)^2$

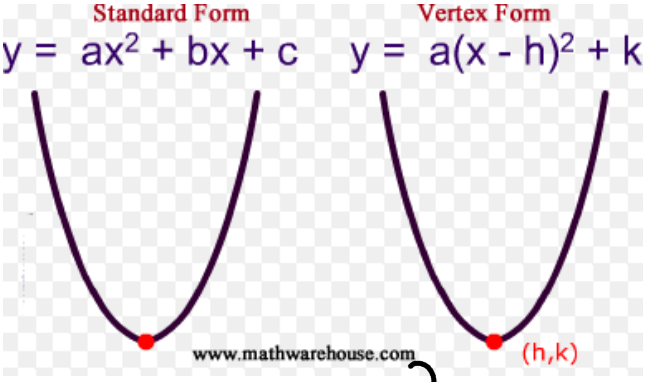
$c = 4$

II. Use completing the square to solve. TOYO:

4.) $3x^2+12x-18=0$

Example

III. Write in vertex form. Identify the vertex.



1.) $y=x^2+2x+5$

$-5 \quad -5$

$y-5 = x^2+2x+1$

$+1$

$y-4 = (x+1)^2$

$+4 \quad +4$

$y=(x+1)^2+4$

$V(-1, 4)$

$\left(=\left(\frac{b}{2}\right)^2\right.$

$\left(=\left(\frac{2}{2}\right)^2=1\right.$

TOYO:

III. Write in vertex form. Identify the vertex.

2.) $y=x^2-4x+10$

$-10 \quad -10$

$y-10 = x^2-4x$

$+4 \quad +4$

$y-6=(x-2)^2$

$y=(x-2)^2+6$

$V(2, 6)$

$c=\left(\frac{b}{2}\right)^2$

$c=\left(-\frac{4}{2}\right)^2$

Example

III. Write in vertex form. Identify the vertex.

2.) $6x^2-12x-18=0$

And your homework: Unit 2 Day 3

Take Home DLT