

Name: KeyDate: 4/9/13

Period: \_\_\_\_\_

**Solving Equations by Factoring****Homework****Practice - Day 1**

Solve each equation. Check your solutions.

★ 1.  $x^2 - 49 = 0$

$(x+7)(x-7)$

1:  $x+7=0$     2:  $x-7=0$

$x = -7$

$x = 7$

$(-7, 0)$

$(7, 0)$

3.  $3x^2 - 9x = 0$      $3x(x-3) = 0$

1:  $\frac{3x}{3} = \frac{0}{3}$     2:  $x-3=0$

$x = 0$

$x = 3$

$(0, 0)$

$(3, 0)$

2.  $3a^2 + a = 0$

$a(3a+1)$

1:  $a = 0$

2:  $3a+1=0$

$(0, 0)$

$\frac{3a}{3} = \frac{-1}{3}$

$a = -\frac{1}{3}$

$(-\frac{1}{3}, 0)$

4.  $x^2 + 8x + 15 = 0$

$(x+5)(x+3) = 0$

~~$\begin{array}{r} 8 \\ +5 \quad +3 \\ \hline 15 \end{array}$~~

1:  $x+5=0$

2:  $x+3=0$

$x = -5$

$x = -3$

$(-5, 0)$

$(-3, 0)$

5.  $x^2 - 5x + 6 = 0$

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

~~$\begin{array}{r} -5 \\ -2 \quad -3 \\ \hline 6 \end{array}$~~

1:  $x-2=0$     2:  $x-3=0$

$x = 2$

$x = 3$

$(2, 0)$

$(3, 0)$

6.  $x^2 - 4x - 21 = 0$

$(x-7)(x+3) = 0$

~~$\begin{array}{r} -4 \\ -7 \quad +3 \\ \hline -21 \end{array}$~~

1:  $x-7=0$

2:  $x+3=0$

$x = 7$

$x = -3$

$(7, 0)$

$(-3, 0)$

7.  $x^2 - 7x + 12 = 0$

$(x-3)(x-4) = 0$

~~$\begin{array}{r} -7 \\ -3 \quad -4 \\ \hline 12 \end{array}$~~

1:  $x-3=0$     2:  $x-4=0$

$x = 3$

$x = 4$

$(3, 0)$

$(4, 0)$

★ 8.  $x^2 - 25 = 0$

$(x+5)(x-5)$

1:  $x+5=0$

2:  $x-5=0$

$x = -5$

$x = 5$

$(-5, 0)$

$(5, 0)$

9.  $x^3 + 2x^2 - 24x = 0$      $x(x^2 + 2x - 24)$

$x(x+4)(x-6) = 0$

~~$\begin{array}{r} 2 \\ +4 \quad +6 \\ \hline -24 \end{array}$~~

1:  $x+4=0$     2:  $x-6=0$

$x = -4$

$x = 6$

$(0, 0)$

$(-4, 0)$

$(6, 0)$

10.  $3x^2 - 27x + 60 = 0$      $3(x^2 - 9x + 20) = 0$

$3(x-5)(x-4) = 0$

~~$\begin{array}{r} -9 \\ -5 \quad -4 \\ \hline 20 \end{array}$~~

1:  $3 \neq 0$

2:  $x-5=0$

3:  $x-4=0$

NO

$x = 5$

$x = 4$

$(5, 0)$

$(4, 0)$