

9.6

DAY 2 NOTES:

"Factoring Trinomials, Solving Equations, & Finding Zeros"

FACTOR the Trinomial:

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

$$\begin{array}{r} \cancel{-1 \cdot 8} \\ \cancel{-8} \\ -2 \quad +4 \\ \hline 2 \end{array}$$

$$\frac{-x^2 - 2x}{-1x} + \frac{4x + 8}{4 \quad 4}$$

$$-x(x+2) + 4(x+2)$$

$$(x+2)(-x+4)$$

2. $-2a^2 - 5a - 3$

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

$$-(2a^2 + 5a + 3)$$

$$-1\left(\frac{2a^2 + 3a}{a} + \frac{2a + 3}{1 \quad 1}\right)$$

$$-1(a(2a+3) + 1(2a+3))$$

$$-1(2a+3)(a+1)$$

SOLVE the Equation:

3. $8t^2 - 2t - 3 = 0$

$$\begin{array}{r} \cancel{8 \cdot -3} \\ \cancel{-24} \\ -6 \quad 4 \\ \hline -2 \end{array}$$

$$\frac{8t^2 - 6t}{2t} + \frac{4t - 3}{1 \quad 1} = 0$$

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

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

$4t-3=0$	$2t+1=0$
$+3 \quad +3$	$-1 \quad -1$
$\frac{4t}{4} = \frac{3}{4}$	$\frac{2t}{2} = \frac{-1}{2}$
$t = 3/4$	$t = -1/2$

4. $b(20b-3) - 2 = 0$

$$\begin{array}{r} \cancel{-8 \cdot 40} \\ \cancel{-320} \\ -8 \quad 5 \\ \hline -3 \end{array}$$

$$20b^2 - 3b - 2 = 0$$

$$\frac{20b^2 - 8b}{4b} + \frac{5b - 2}{1 \quad 1} = 0$$

$$4b(5b-2) + 1(5b-2) = 0$$

$$(5b-2)(4b+1) = 0$$

$5b-2=0$	$4b+1=0$
$+2 \quad +2$	$-1 \quad -1$
$\frac{5b}{5} = \frac{2}{5}$	$\frac{4b}{4} = \frac{-1}{4}$
$b = 2/5$	$b = -1/4$

Find The Zeros of the Function (#5)

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

$$0 = 3x^2 + x - 14$$

$$\begin{array}{r} \cancel{-42} \\ \cancel{7} \quad \cancel{-6} \\ \hline 1 \end{array}$$

$$0 = \frac{3x^2 + 7x}{x} + \frac{-6x - 14}{-2 \quad -2}$$

$$0 = x(3x+7) - 2(3x+7)$$

$$0 = (3x+7)(x-2)$$

$$3x+7=0$$

$$\frac{-7 \quad -7}{-7 \quad -7}$$

$$3x = -7$$

$$x = -7/3$$

$$x-2=0$$

$$x=2$$