Name: _____
Date: _____
Class: _____

Algebra
Unit 8
HW 8-1

1) Solve: $x^2 - 14x + 48 = 0$

48 Same signs

$-6 + -8 = -14$

$(x-6)(x-8)=0$

$x-6=0 \quad x-8=0$

$x=6 \quad x=8$

2) Solve: $x^2 - 4x - 96 = 0$

96 d.f signs

$8 + -12 = -4$

$(x-12)(x+8)=0$

$x-12=0 \quad x+8=0$

$x=12 \quad x=-8$

3) Solve: $x^3 - 7x^2 - 98x = 0$

GCF = x (÷ x ÷ x ÷ x)

98 d.f signs

$7 + -14 = -7$

$x(x^2-7x-98)=0$

$x(x-14)(x+7)=0$

$x=0 \quad x-14=0 \quad x+7=0$

$x=0 \quad x=14 \quad x=-7$

4) Solve: $12x^2 + 4x - 21 = 0$

252 d.f signs

$-14 + 18 = 4$

$x^2+4x-252=0$

$(x-\frac{14}{12}\frac{7}{6})(x+\frac{18}{12}\frac{3}{2})$

$(6x-7)(2x+3)=0$

$6x-7=0 \quad 2x+3=0$

$x=\frac{7}{6} \quad x=-\frac{3}{2}$

5) Solve: $24x^3 - 38x^2 + 36x = 0$

(÷ $2x$ ÷ $2x$ ÷ $2x$)

GCF → $2x$

d.f signs

216

$2x(12x^2-19x+18)=0$

$x^2-19x+216=0$

$2x(x+\frac{8}{12}\frac{2}{3})(x-\frac{27}{12}\frac{9}{4})$

$8 + -27 = -19$

$2x(3x+2)(4x-9)=0$

$2x=0 \quad 3x+2=0 \quad 4x-9=0$

$x=0 \quad x=-\frac{2}{3} \quad x=\frac{9}{4}$

6) Solve: $12x^2 - 37x + 21 = 0$

$x^2 - 37x + 252 = 0$

252 same signs

$-9 + -28 = -37$

$(x - \frac{9}{12}\frac{3}{4})(x - \frac{28}{12}\frac{7}{3}) = 0$

$(4x-3)(3x-7) = 0$

7) Solve: $x^2 - 26x - 120 = 0$

$4x - 3 = 0$ → $x = \frac{3}{4}$

$3x - 7 = 0$ → $x = \frac{7}{3}$

120 diff signs

$4 + -30 = -24$

$(x+4)(x-30) = 0$

$x + 4 = 0$ → $x = -4$

$x - 30 = 0$ → $x = 30$