Algebra III

Solving Equations By Factoring

Warm up:

Factor: $x^2-3x-18$

$(x-6)(x+3)$

1 18
2 9
3 6

$2x^3-11x^2+12x$

$x(2x^2-11x+12)$

$x(2x-3)(x-4)$

not both

1 12
2 6
3 4

Solve the following equations:

$x^2-3x-18=0$

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

$x-6=0$ or $x+3=0$

$x=6$ $x=-3$

$\{-3, 6\}$

$2x^3-11x^2+12x=0$

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

$x=0$ $2x-3=0$ $x-4=0$

$2x=3$

$x=3/2$ $x=4$

$\{0, 3/2, 4\}$

Solve the following equations:

$x^2 = 6x - 8$

$x^2 - 6x + 8 = 0$

$(x-4)(x-2) = 0$

$x - 4 = 0$ $\quad x - 2 = 0$

$x = 4$ $\quad x = 2$

$\{2, 4\}$

$3x^2 = 48$

$3x^2 - 48 = 0$

$3(x^2 - 16) = 0$

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

$3 \neq 0$ $\quad x+4=0$ $\quad x-4=0$

$x = -4$ $\quad x = 4$

$\{\pm 4\}$

The longer sides of a parallelogram are each 8 m longer than the height. The area of the piece is 48 m². Find the length of the longer sides and the height.

height = h

Base = 8 more than h

$A = \text{Base} \cdot \text{height}$

$48 = (8+h) \cdot h$

$8h + h^2 - 48 = 0$

$h^2 + 8h - 48 = 0$

$(h-4)(h+12) = 0$

$h - 4 = 0$ $\quad h + 12 = 0$

$h = 4$ $\quad h = -12$ not possible

$h = \{-12, 4\}$

1	48
2	24
3	16
4	12
6	8

HW: p 312 #3-15 odd, 19-25 odd,
37-39