

p. 191 # 29-38

29, 32, 35, 37, 38

29.  $2h^2 + 7hk - 15k^2$   $\begin{matrix} 1, 15 \\ 2, 3, 5 \end{matrix}$

$(2h - 3k)(h + 5k)$

check:  $2h^2 + 10hk - 3hk - 15k^2$   
 $2h^2 + 7hk - 15k^2$

32.  $4y^2 - 17y + 15$   $\begin{matrix} 1, 15 \\ 3, 5 \end{matrix}$

~~$\frac{1, 4}{2, 12}$~~   $(4y - 5)(y - 3)$

$1 \cdot 5 \quad 4 \cdot 3$   
 $5 \quad 12$

check:  $4y^2 - 12y - 5y + 15$   
 $4y^2 - 17y + 15$

35.  $12p^2 - 32pq - 5q^2$   $\begin{matrix} 1, 5 \\ 3, 4 \end{matrix}$

~~$\frac{1, 12}{2, 24}$~~   $( \quad q ) ( \quad 5q )$

**PRIME**

37.  $4x^3 + 8x^2y - 5xy^2$

$x(4x^2 + 8xy - 5y^2)$   $\begin{matrix} 1, 5 \\ 3, 4 \end{matrix}$

~~$\frac{1, 4}{5, 12}$~~   $x(2x + 5y)(2x - y)$

check:  $x(4x^2 - 2xy + 10xy - 5y^2)$   
 $x(4x^2 + 8xy - 5y^2)$   
 $4x^3 + 8x^2y - 5xy^2$

38.  $4x^2 + 3xy - 15y^2$   $\begin{matrix} 1, 15 \\ 3, 5 \end{matrix}$

~~$\frac{1, 4}{2, 12}$~~   $(x \quad ) (4x \quad )$

**PRIME**

HW Assessment  
2/1

30.  $2u^2 + uv - 2v^2$

## Solving Polynomial EQ's

$$x^2 + 9x + 14 = 0$$

$$x^2 + 9x = -14$$

We can't use Basic Algebra  
 We want just  $x$  not  $x + x^2$   
 we do this by factoring!!

$$x^2 + 9x + 14 = 0$$

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

$A \cdot B = 6$  — infinite possibilities  
 for  $A$  &  $B$

$$A \cdot B = 0$$

$$A = 0 \quad B = 0$$

$$x^2 + 9x + 14 = 0$$

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

$$x + 7 = 0 \quad x + 2 = 0$$

$$x = -7 \quad x = -2$$

$$\boxed{x = -7, -2}$$

## Process

- 1) Get everything on one side = 0
- 2) Factor
- 3) Set Factors equal to zero and solve
- 4) think about double roots

$$t(t+5)(5t-8)=0$$

$$t=0$$

$$t+5=0$$

$$t=-5$$

$$5t-8=0$$

$$\frac{5t=8}{5}$$

$$t=8/5$$

$$t = -5, 0, 8/5$$

$$t(t-5)^2=0$$

$$t(t-5)(t-5)=0$$

$$t=0 \quad t-5=0 \quad t-5=0$$

$$t=5 \quad t=5$$

solution twice  
so  
double root

$$t = 0, 5 \text{ dr}$$

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

$$x^2(x^2 - 1) = 0$$

$$x^2(x+1)(x-1) = 0$$

$$x=0 \text{ or } x+1=0 \text{ or } x-1=0$$
$$x=0 \text{ or } x=-1 \text{ or } x=1$$

$$x = -1, 0, 1$$