~Solve by Factoring Notes~

SOLVING WHEN ALREADY IN FACTORED FORM

Solve.

1. $(x + 1)(x - 5) = 0$	2. $(4x + 5)(x + 1) = 0$	3. $(2x + 3)(4x + 3) = 0$	4. $2x(3x + 1) = 0$
$x+1=0$ $x-5=0$ $\boxed{x=-1,\ x=5}$	$4x+5=0$ $x+1=0$ $4x=-5$ $\boxed{x=-5/4 \quad x=-1}$	$2x+3=0$ $x=-3/2$ $4x+3=0$ $x=-3/4$	$2x=0$ $x=0$ $3x+1=0$ $x=-1/3$

SOLVING USING GREATEST COMMON FACTOR

Factor using GCF. Then solve.

5. $6x^2 + 12x = 0$	6. $x^2 + 14x = 0$
$6x(x+2)=0$ $6x=0$ $x+2=0$ $x=0$ $x=-2$	$x(x+14)=0$ $x=0$ $x+14=0$ $x=-14$

SOLVING USING THE DIFFERENCE OF TWO SQUARES

Factor using DOTS. Then solve

7. $x^2 - 36 = 0$	8. $4x^2 - 81 = 0$
$(x+6)(x-6)=0$ $x=\pm 6,$	$(2x+9)(2x-9)=0$ $2x-9=0$ $x=9/2$ $x=\pm\frac{9}{2}$ $2x+9=0$ $x=-9/2$

SOLVING TRINOMIALS

Factor each trinomial. Then solve.

9. $x^2 + 3x - 28 = 0$	10. $x^2 + x - 42 = 0$
$(x-4)(x+7)=0$ $\boxed{x=4,\ x=-7}$	$(x-6)(x+7)=0$ $\boxed{x=6,\ x=-7}$

11. $2x^2 + 5x + 3 = 0$	12. $2x^2 - x - 6 = 0$
6 1,6 2,3 $(x+\frac{2}{2})(x+\frac{3}{2})=0$ $(x+1)(x+\frac{3}{2})=0$ $\boxed{x=-1,\ x=-3/2}$	12 1,12 6,2 4,3 $(x-\frac{4}{2})(x+\frac{3}{2})$ $(x-2)(x+\frac{3}{2})$ $\boxed{x=2,\ x=-3/2}$