

Key Point: To Solve most quadratics, you want to get everything to one side first.

You then usually factor or use some other technique...like the quadratic formula.

Advanced Algebra

Unit 4: Quadratics

Assignment #3

Make sure to get everything to 1 side!

Solve the following by factorization

1) $4x^2+7x=0$

$x(4x+7)=0$

$x=0$ $x=-\frac{7}{4}$

2) $6x^2+2x=0$

$2x(3x+1)=0$

$2x=0$ $3x+1=0$
 $x=0$ $x=-\frac{1}{3}$

3) $3x^2-7x=0$

$x(3x-7)=0$

$x=0$ $x=\frac{7}{3}$

4) $2x^2-11x=0$

$x(2x-11)=0$

$x=0$ $2x-11=0$
 $x=0$ $x=\frac{11}{2}$

5) $3x^2=8x$

$3x^2-8x=0$

$x(3x-8)=0$
 $x=0$ or $3x-8=0$
 $x=0$ $x=\frac{8}{3}$

6) $9x=6x^2$

$6x^2-9x=0$

$3x(2x-3)=0$
 $3x=0$ $2x-3=0$
 $x=0$ $x=\frac{3}{2}$

7) $x^2-5x+6=0$

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

3 and 2

8) $x^2=2x+8$

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

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

9) $x^2+21=10x$

$x^2-10x+21=0$

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

10) $9x^2=6x$

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

$x=\frac{2}{3}$

11) $x^2+x=12$

$x^2+x-12=0$

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

12) $x^2+8x=33$

$x^2+8x-33=0$

$(x+11)(x-3)=0$
 $x=-11$ $x=3$

13) $9x^2-12x+4=0$

$x^2-6x+4=0$
 $(x-3)(x-2)=0$
 $x=3$

14) $2x^2-13x-7=0$

$(2x+1)(x-7)=0$

$x=-\frac{1}{2}$ $x=7$

Unit 4 Assignment #3

Key point - Get Everything to one side

15) $3x^2=16x+12$

$$3x^2 - 16x - 12 = 0$$

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

$$\boxed{x = -\frac{2}{3} \quad x = 6} \quad \text{Roots}$$

16) $3x^2+5x=2$

$$3x^2 + 5x - 2 = 0$$

$$(3x-1)(x+2) = 0$$

$$\boxed{x = \frac{1}{3} \quad x = -2} \quad \text{Roots}$$

17) $2x^2+3=5x$

$$2x^2 - 5x + 3 = 0$$

$$(2x-3)(x-1) = 0$$

$$\boxed{x = \frac{3}{2} \quad x = 1} \quad \text{Roots}$$

18) $3x^2+8x+4=0$

$$3x^2 + 8x + 4 = 0$$

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

$$\boxed{x = -\frac{2}{3} \quad x = -2} \quad \text{Roots}$$

19) $3x^2=10x+8$

$$3x^2 - 10x - 8 = 0$$

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

$$\boxed{x = -\frac{2}{3} \quad x = 4} \quad \text{Roots}$$

20) $4x^2+4x=3$

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

$$(2x-1)(2x+3) = 0$$

$$\boxed{x = \frac{1}{2} \quad x = -\frac{3}{2}} \quad \text{Roots}$$

21) $4x^2=11x+3$

$$4x^2 - 11x - 3 = 0$$

$$(4x+1)(x-3) = 0$$

$$\boxed{x = -\frac{1}{4} \quad x = 3} \quad \text{Roots}$$

22) $12x^2=11x+15$

$$12x^2 - 11x - 15 = 0$$

$$(4x+3)(3x-5) = 0$$

$$\boxed{x = -\frac{3}{4} \quad x = \frac{5}{3}} \quad \text{Roots}$$

23) $7x^2+6x=1$

$$7x^2 + 6x - 1 = 0$$

$$(7x-1)(x+1) = 0$$

$$\boxed{\frac{1}{7} \text{ and } -1} \quad \text{Roots}$$

14) $15x^2+42x=-24$

$$15x^2 + 42x + 24 = 0$$

$$(5x+4)(3x+6) = 0$$

$$\boxed{x = -\frac{4}{5} \text{ and } x = -2} \quad \text{Roots}$$