

$$x^2 = 5$$

$$\sqrt{x^2} = \sqrt{5}$$

$$x = \pm\sqrt{5}$$

$$x = \sqrt{5} \quad \text{or} \quad x = -\sqrt{5}$$

$$x^2 = 5$$

$$x^2 = 5$$

$$x^2 - 5 = 0$$

$$x^2 = 2001$$

$$x^2 - 2001 = 0$$

$$x = \sqrt{2001}$$

$$x = -\sqrt{2001}$$

$$\frac{7\sqrt{3}}{3}$$

$$3x^2 = 49$$

$$\sqrt{x^2} = \sqrt{\frac{49}{3}}$$

$$x = \pm \frac{7}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}}$$

$$x = \pm \frac{7\sqrt{3}}{3}$$

$$\frac{7\sqrt{3}}{\sqrt{2} \cdot \sqrt{5}} = \frac{7\sqrt{3}}{\sqrt{10}}$$

$$\sqrt{\frac{39}{2}}$$

$$\frac{\sqrt{39}}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}}$$

$$\frac{\sqrt{78}}{\sqrt{4}}$$

$$\pm \frac{\sqrt{78}}{2}$$

## 5.3 Factoring Quadratic Expressions

$x^2 + 8x$   
 GCF  $x(x + 8)$        $\frac{x^2}{x}$        $\frac{8x}{x}$   
 1 set of  $( )$

$2x^3 + 10x$   
 $2x(x^2 + 5)$

$4x^2 + 4$   
 $4(x^2 + 1)$

$$x^2 + 8x + 7$$

~~GCF~~

FOIL

$$(x+1)(x+7)$$

$$(x+1)(x+7)$$

$$x^2 - 5x + 4$$

$$1 \cdot 4$$

$$2 \cdot 2$$

$$(x-1)(x-4)$$

$$x^2 - 9x - 36$$

$$1 \cdot 36$$

$$2 \cdot 18$$

$$3 \cdot 12$$

$$4 \cdot 9$$

$$6 \cdot 6$$

$$(x+3)(x-12)$$

$$x^2 + 9x - 36$$

$$(x-3)(x+12)$$

$$(4x+2)5 + (4x+2)y$$

GCF

$$(4x+2)(5+y)$$

$$20x+10 + 4xy + 2y$$

$$(4x+2)(5+y)$$

$$(3a+2)7 + (3a+2)b$$


$$(3a+2)(7+b)$$

$$-4(2m+5) + n(2m+5)$$

$$(2m+5)(-4+n)$$

$$(2m+5)(n-4)$$

$$3x^2 - 5x - 2 \quad 1 \cdot 2$$

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


## Solve Quadratic Equations

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

Set = 0

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

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

Set each factor = 0

$$3x + 1 = 0 \quad \text{or} \quad x - 2 = 0$$

Solve

$$\frac{3x}{3} = -\frac{1}{3}$$

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

p296

$$32 - 92 \quad x \ 4$$