

**How Algebra II teachers want us to teach factoring to our Algebra I students—  
From David Curlette**

Factor:  $3x^2 + 17x + 10$

1. Look at the 2 outside numbers {here 3 and 10} and multiply them together:  $3 \times 10 = 30$
2. Now factor the product of the outside numbers: here factor 30, the product of  $3 \times 10 = 30$ ,  $15 \times 2 = 30$ ,  $6 \times 5 = 30$ 
  - A. We need to take each factor product and add the two factors together  $\rightarrow$  we want the answer to equal 17 (the middle number in quadratic equation)  $\rightarrow 3 + 10 = 17$ ,  
 $15 + 2 = 17$  ... now stop, since  $15 \times 2 = 30$  and  $15 + 2 = 17$ .
3. Now create 2 binomials both of which first terms are the number and the variable [no exponent] of the first term of the original polynomial. The second terms are the factors of the 2 outside numbers [step one] who sum is equal to the number of the second term

$$(3x + 15)(3x + 2)$$

4. Factor out the GCF of the above binomials: here the GCF is 3, and divide the binomial by the GCF:

$$\frac{(3x + 15)(3x + 2)}{3}$$

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