1.7 More Factored Form

We have used the zero product property to solve quadratic equations that are written in factored form. But often times, quadratics functions are written in standard form. We are going to explore two different methods for rewriting a quadratic in factored form. These are not the only ways to factor, but from these methods you may be able to come up with more!

	Factor $5z^{2} + 4z - 12$.	-12 and 1
FACTOR BY GUESS AND CHECK: 6x ² +19x+15	Try different combinations:	12 and – 1 –6 and 2 6 and –2
template: factors of 6: factors of 15: (+)(+) 1.6 2.3 1.15 3.5	(5z-12)(z+1) =	-4 and 3 4 and -3
$(x+1)(6x+15) \times (2x+3)(3x+5)$	(5z+4)(z-3) =	
$=6x^{2}+15x+6x+15 = 6x^{2}+10x+9x+15$ $=6x^{2}+21x+15 = 6x^{2}+19x+15$	(5z-6)(z+2) =	
7-4 Factoring $ax^2 + bx + c$	$5z^2 + 4z - 12 = (5z - 1)^2$	6)(z+2)
Check It Out! Example 1b X-Method Factor each trinomial by gress and check. $3x^2 - 2x - 8$ GCF = 1 $-bx - C \rightarrow opp (subtract)$	$ 4x^{0}-15x+4 $	
$\frac{2}{1} - \frac{24}{3} + \frac{24}{1} = \frac{24}{1} + \frac{24}{1} = \frac{1}{1} + \frac{24}{1} = \frac{1}{1} + \frac{24}{1} = \frac{1}{1} + \frac{24}{1} = \frac{1}{1} + \frac{1}{1} + \frac{1}{1} + \frac{1}{1} = \frac{1}{1} + \frac{1}{1} + \frac{1}{1} + \frac{1}{1} = \frac{1}{1} + \frac{1}{1}$	-7=-12 -8=-4 14x2	1)(7x-4)) -7x-8x+4
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Write the following in factored form.

- 1. $y = x^2 7x 18$
- 2. $y = x^2 9x + 8$
- 3. $y = x^2 + 2x 24$
- 4. $y = 2x^2 + x 6$

5. $y = 6x^2 + 5x - 6$ 6. $y = 4x^2 - 19x + 12$ 7. $y = x^2 - 13x + 40$ 8. $y = 4x^2 - 15x - 25$

Eactor $5z^2 + 4z - 12$

Using one of the factoring methods discussed in class, find the following key features of each quadratic function. If you have come up with your own method for factoring, you may use it. You must show your work on each problem!

- a. Determine the y-intercept
- b. Rewrite the function in factored form
- 1. $f(x) = x^2 10x + 24$
- 2. $g(x) = x^2 5x 24$

c. Determine the x-intercepts

d. Identify the vertex

3. $h(x) = 20x - x^2$ 4. $b(x) = 10x^2 - x - 21$