

$$40/40 = 100$$

Foundations for College Algebra  
University of North Georgia  
Fall 2016  
Quiz # 8

- Extra Credit: 18 pts
- 58/40 = 145 possible

Factor the following completely.

1.  $x^2 - 16x + 48$      $ac = 48$      $\frac{-}{12} \mid \frac{-}{4}$   
 $x^2 - 12x - 4x + 48$      $b = -16$   
 $x(x-12) - 4(x-12)$   
 $(x-12)(x-4)$

Check  
 $(x-12)(x-4)$   
 $x^2 - 4x - 12x + 48$   
 $x^2 - 16x + 48 \checkmark$

2.  $x^2 - 4x - 5$      $ac = -5$      $\frac{-}{5} \mid \frac{+}{1}$   
 $x^2 - 5x + x - 5$      $b = -4$   
 $x(x-5) + 1(x-5)$   
 $(x-5)(x+1)$

$(x-5)(x+1)$   
 $x^2 + x - 5x - 5$   
 $x^2 - 4x - 5 \checkmark$

3.  $6x^2 + 17x + 7$      $ac = 42$      $\frac{+}{14} \mid \frac{+}{3}$   
 $6x^2 + 14x + 3x + 7$      $b = 17$   
 $2x(3x+7) + 1(3x+7)$   
 $(3x+7)(2x+1)$

$(3x+7)(2x+1)$   
 $6x^2 + 3x + 14x + 7$   
 $6x^2 + 17x + 7 \checkmark$

4.  $25x^2 - 4$      $a = 5x$      $b = 2$   
 $(5x+2)(5x-2)$

$(5x+2)(5x-2)$   
 $25x^2 - 10x + 10x - 4$   
 $25x^2 - 4 \checkmark$

5.  $27x^3 + 8$      $a = 3x$      $b = 2$   
 $(3x+2)(9x^2 - 6x + 4)$

$(3x+2)(9x^2 - 6x + 4)$   
 $27x^3 - 18x^2 + 12x + 18x^2 - 12x + 8$   
 $27x^3 + 8 \checkmark$

