NAME: Answers

Write clear answers for the following questions:

1. Factor completely:
   (a) $x^2 - 2x - 8$
      
      $$x^2 - 2x - 8 = (x + 2)(x - 4).$$

   (b) $4x^2 + 4xy + y^2$
      
      $$4x^2 + 4xy + y^2 = (2x + y)^2.$$  

2. Simplify the following:
   (a) $\sqrt{81x^2 + 81}$
      
      $$\sqrt{81x^2 + 81} = \sqrt{9^2(x^2 + 1)} = 9[x^2 + 1]^\frac{1}{2} = 9\sqrt{x^2 + 1}.$$ 

   (b) $(8a^3b^{-4})(2a^{-5}b^5)^{-1}$
      
      $$ (8a^3b^{-4})(2a^{-5}b^5)^{-1} = (8a^3b^{-4})(\frac{1}{2}a^5b^{-5}) = 4a^8b^{-9} = \frac{4a^8}{b^9}. $$