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**Math 2150, Fall 2006, Quiz 8**  
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1. Find the values of  $k$  for which  $y'' + 6y' + ky = 0$  is underdamped.
2. Find the solution to  $y'' + 6y' + 8y = 0$ ,  $y(0) = 2$ ,  $y'(0) = 0$ .
3. How many times does this solution cross  $y = 0$  for  $t > 0$ ?