**Math 16A: Short Calculus I**
**Fall 2017, Section 3**
**Homework Sheet 1**
**Due: Monday, October 2, 2017**

Submit your solutions to the following problems in lecture on the due date above. Present your work in a clean and organized fashion, either on a printed copy of this document (preferred) or a separate sheet of paper. As stated in the syllabus, late submissions will **not** be accepted.

1. Find all points where the circle centered at $(5, 3)$ with radius 5 intersects the line that has slope $\frac{1}{2}$ and passes through the point $(0, -2)$.

2. Suppose $f(x) = (x - 6)^2 + 2$ with domain $[6, \infty)$.

    (a) Find the inverse function $f^{-1}(x)$, and state its domain.

    (b) Verify that $f(f^{-1}(x)) = x$ and $f^{-1}(f(x)) = x$.

    (c) Graph $f(x)$ and $f^{-1}(x)$ on the same axes (*without* using a calculator). What about the shape of their graphs tells you that they are inverse functions?