1. If $a$ and $h$ are real numbers, find:

\[ \frac{f(a + h) - f(a)}{h} \]

for

\[ f(x) = x^2 - 4x + 7 \]

2. State the domain.

\[ f(x) = \frac{\sqrt{9 - x}}{x - 3} \]

3. Sketch the graph, state the domain, range, and intervals where the function is increasing and decreasing.

\[ f(x) = (x - 3)^2 + 2 \]

Domain: ____________  
Range: ____________  
Inc.: ____________  
Dec.: ____________
4. Determine the parent function, graph the parent graph and the transformation.

\[ f(x) = 2\sqrt{x-3} + 4 \]

5. Graph the piecewise function.

\[ f(x) = \begin{cases} 
1 - 2x, & x \leq -2 \\
x^2, & -2 < x < 1 \\
2 - 3x, & x \geq 1 
\end{cases} \]