Name: _____ _____ **/ 25**

Please circle your instructor's name: James Gossell Kevin Meek

There are 5 questions worth 25 points on this quiz. No aids (book, calculator, etc.) are permitted. **Show all work for full credit.** Give **exact** numerical answers such as $\sqrt{7}$ or $\frac{5}{\pi}$.

1. [7 points] Determine the following for the function $f(x) = x^2 - 3x - 7$. **Simplify** your answers.

a. $f(-1)$

b. $f(2a)$

c. $f(z+2)$

d. Find all values of x such that $f(x) = 3$

2. [4 points] Write an equation for each of the following lines:

a. The line containing the point $(3,-1)$ with slope $\frac{2}{3}$.

b. The line containing the points $(3,-1)$ and $(-2,6)$.

3. [2 points] State the average rate of change for the function $F(x)=\sqrt{3-x}$ on the interval $[-22,-6]$.

4. [6 points] State the domain and range of the following functions:

a. $f(x) = -2(x-4)^2 + 3$

domain: _____ range: _____

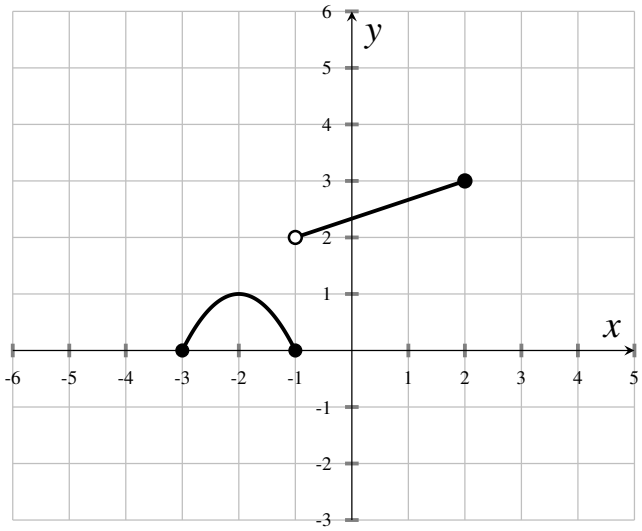
b. $h(x) = 2^x$

domain: _____ range: _____

c. $g(x) = \dfrac{3x^2}{x^2 - 8x + 15}$

domain: _____ range: _____

5. [6 points] The complete graph of the function $G(x)$ is given below.



a. State the domain of G. _____

b. State the range of G. _____

c. **Estimate** $G(0)$. _____

d. For which x-value does $G(x) = 1$? _____

e. Graph the transformed function $G(x-3)+2$ on the axes above.