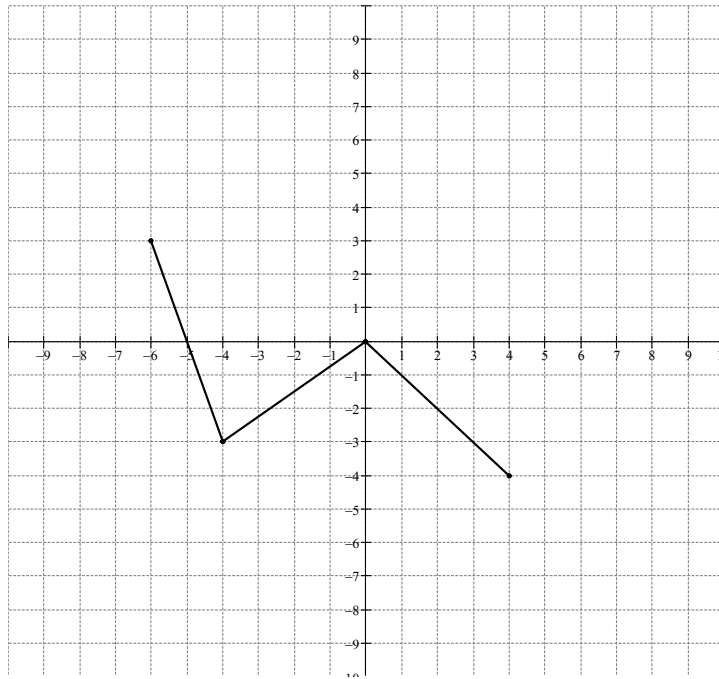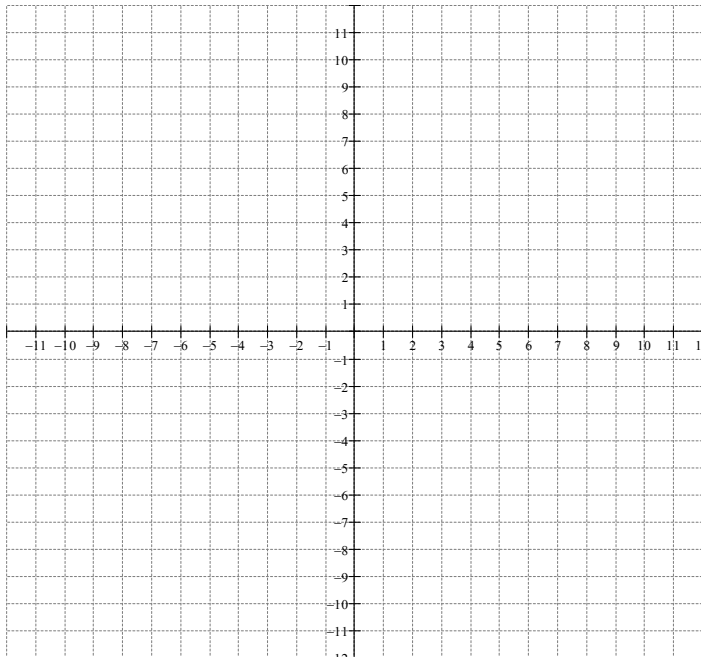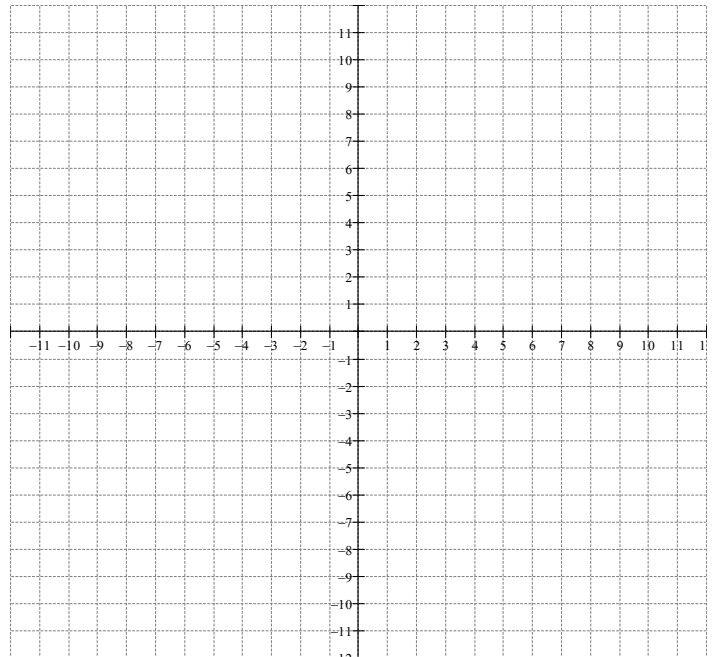Name : _____

Final Exam Review (Written Practice)

1. The graph of $y = f(x)$ is shown below.

a) Sketch the graph of $y + 2 = f(-4x + 12)$

b) Sketch the graph of $y - 1 = -2f(x - 3)$

2. Solve the following equations algebraically.

a) $\log_6(x-3) + \log_6(x+6) = 2$

b) $3^{2x} = 7^{x+1}$

3. For the function $f(x) = \dfrac{x^2 + 12x + 32}{x^2 + 10x + 16}$ determine the following, if they exist:

x-intercept _____

y-intercept _____

Vertical asymptote _____

Point of discontinuity _____

4. Rewrite $y = \dfrac{-5x-1}{x+2}$ in the form $y = \dfrac{a}{x-k} + h$

5. Given $f(x) = 2x^2 + 5$ and $g(x) = \sqrt{x-2}$ determine the value of

   a) $f(g(6))$

   b) $g(f(-1))$

6. Prove the identity.

| $\sec x$ | $\dfrac{2\csc 2x \tan x}{\sec x}$ |