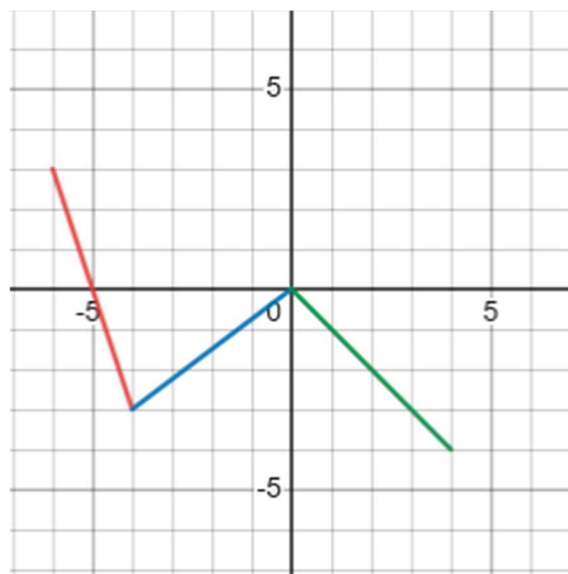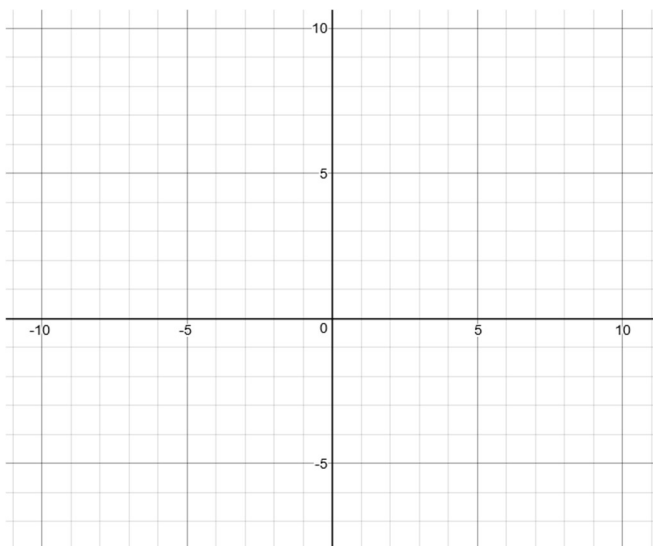# Pre-Calculus 12 : Final Exam Written Answer Practice
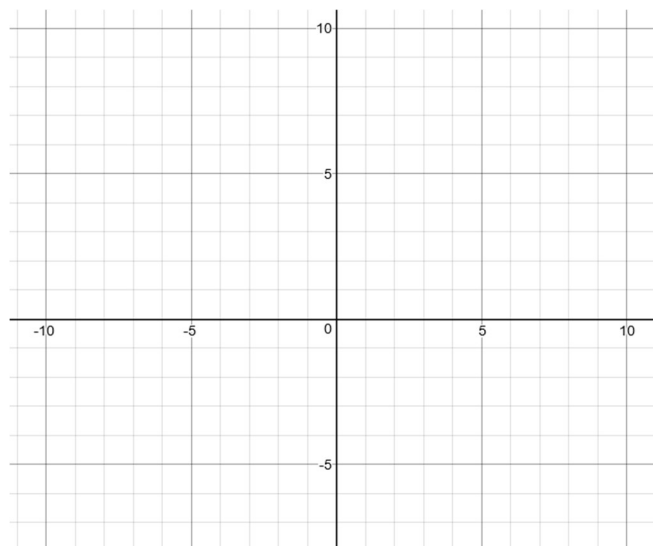
1. The graph of $y = f(x)$ is shown below.

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

b) a) 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 $y = \dfrac{a}{x-h} + k$

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

a) $f(g(6))$ b) $g(f(-1))$

6. Prove the identity.

$$\sec x = \frac{2 \csc 2x \tan x}{\sec x}$$