Name____________________________ **Student Id:**____________________________

Math 120, Section A **Quiz 6** **13 November 1997**

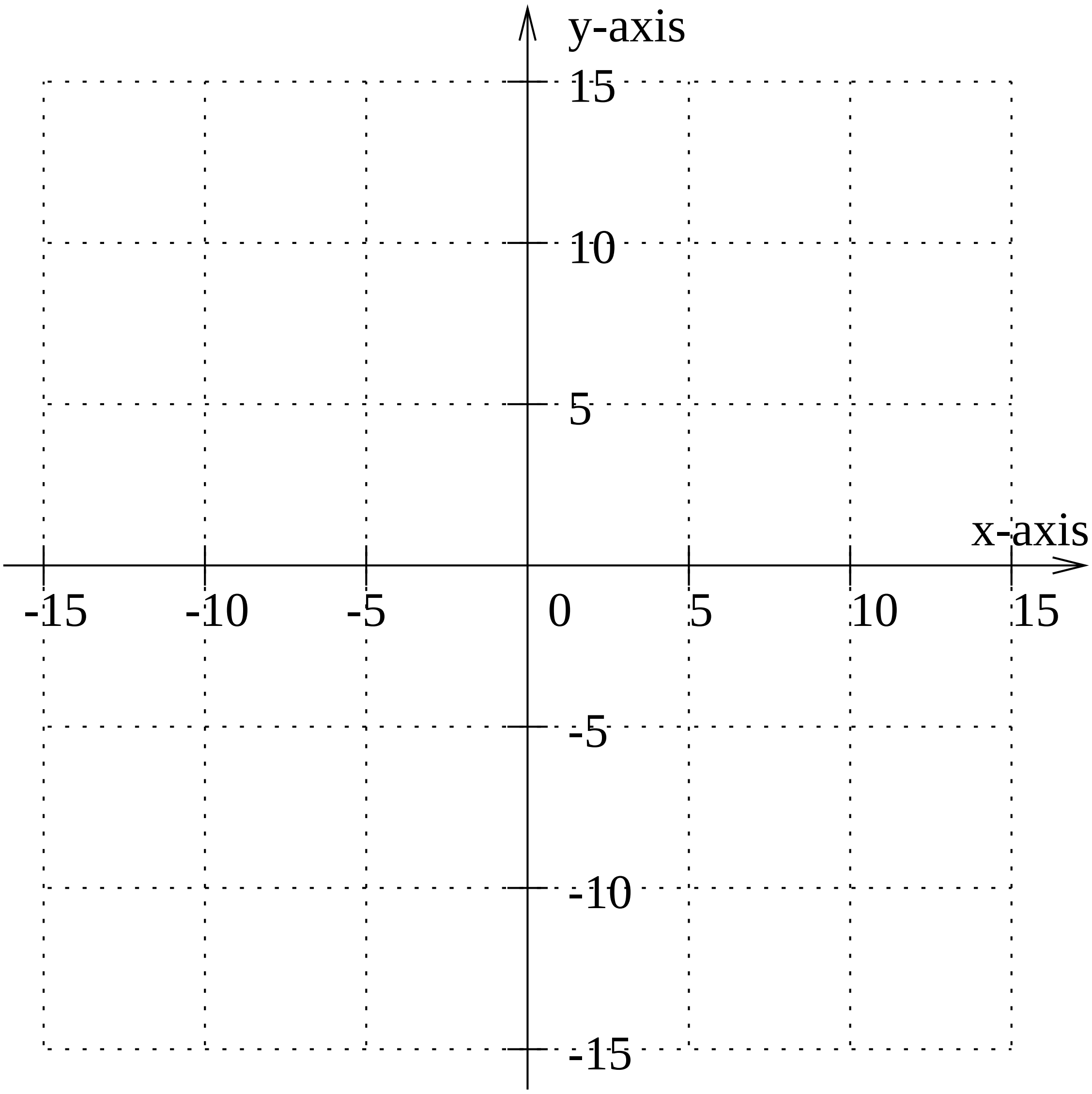
Instructions: You have 45 minutes for this quiz. Show all of your work.

Problem #1:

1.1 (10) Let $f(x) = 3x^2 - 24x + 53$. Find all the inverse functions for $y = f(x)$.

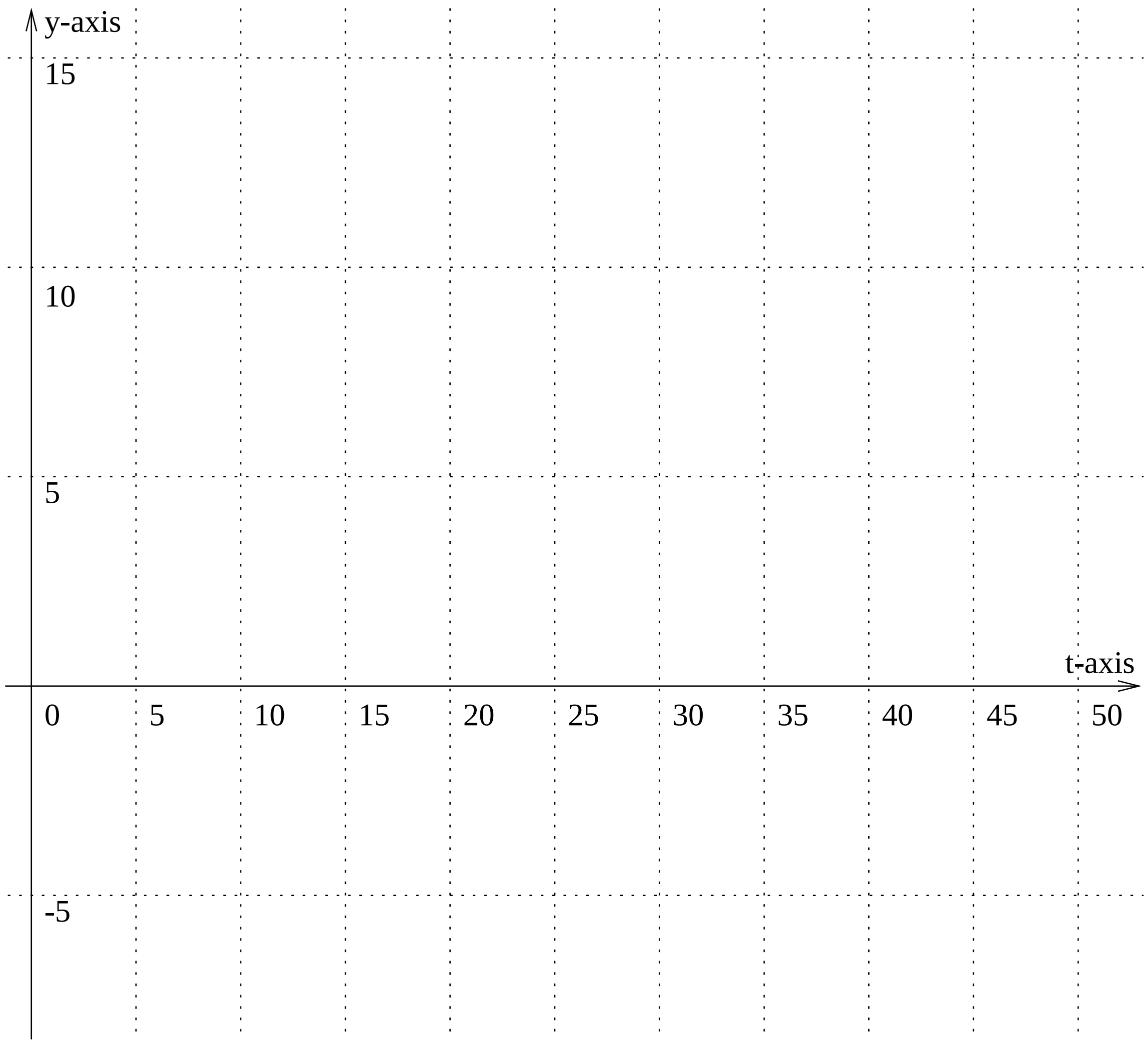
Problem #1 Continued:

1.2 (10) Sketch and label the original function, $y = f(x)$, and its inverses in the xy–coordinate system below.



Problem #2: A quantity y varies sinusoidally with t. That is, $y = f(t)$. You notice that y has a minimum value of -2 units when $t = 8$. You then observe y increasing from its minimum value up to a maximum of $y = 12$ units when $t = 18$.

2.1 (10) Using the data above, sketch the sinusoidal function showing its amplitude, period, phase shift, and mean.



Problem #2 Continued:

2.2 (20) Write the sinusoidal function $f(t) = A \sin\left[\frac{2\pi}{B}(t - C)\right] + D$. Show all your work for finding A, B, C, and D.