MATH 160 Session #8

What do we know about linear relations (functions)?

Suppose we know that f is a linear function, f(2) = 13, and f(5) = 1. Write an explicit rule for f. (Assume the domain of f consists of all real numbers x such that $-10 \leq x \leq 10$.) Find x such that f(x) is maximized.

What do we know about quadratic relations (functions)?

Suppose $q(x) = 2x^2 + 8x - 42$ for $-10 \leq x \leq 10$. Find x such that q(x) is maximized and also find x such that q(x) is minimized and x such that q(x) = 0.

What do we know about compound interest and exponential growth?

Suppose we deposit funds in an account that pays 5% interest compounded monthly. How much would we need to deposit if we wanted the account to be worth $30,000 in 18 years? Assume no further deposits or withdrawals are made. How much would we need to deposit if compounding were continuous?