MATH 12 EXTRA PROBLEMS (CH. 1 AND 2)

(1) Solve $2x^2 - 6x + 3 = 0$ using A) completing the square,
B) the quadratic formula.

(2) Find a point P on the curve $y = x^3$ such that the slope of the line through P and (1,1) is $\frac{3}{4}$.

(3) Find the reflection of the point (3,2) in the line $y = 2x + 1$.

(4) Find the domain and range of $f(x) = \frac{12x}{x^2+9}$.

Find and simplify the following difference quotients:

(5) $\frac{f(x+h) - f(x)}{h}$ for $f(x) = x^3 + 5x^2$

(6) $\frac{f(x+h) - f(x)}{h}$ for $f(x) = \sqrt{3x - 2}$

(7) $\frac{f(t) - f(x)}{t - x}$ for $f(x) = \frac{4}{x^2}$

(8) $\frac{f(t) - f(x)}{t - x}$ for $f(x) = \frac{2x+5}{x-4}$.
