DQ of $g(x) = x^3$.

$$\frac{(a+h)^3 - a^3}{h} = \frac{a^3 + 3a^2h + 3ah^2 + h^3 - a^3}{h} = \frac{h(3a^2 + 3ah + h^2)}{h} = 3a^2 + 3ah + h^2$$

$h \neq 0$

Hw DQ of $f(x) = 3x^2 + 2x + 1$

Simplify: ① $(3x^5)^3 (2x^7)^2$

② $\sqrt{54xy^4} = \sqrt{54}\sqrt{x}\sqrt{y^4}$

$= 3\sqrt{6}\sqrt{x}\, y^2$

$= \boxed{3y^2\sqrt{6x}}$

③ $2\sqrt{50} + 12\sqrt{8}$

④ $5\sqrt{10x^2} - \sqrt{90x^2}$

⑤ $8\sqrt[3]{27x} - \frac{1}{2}\sqrt[3]{64x}$

⑥ Solve for x

$x^2 = x$