Problem statement Suppose that $f(x)$ and $g(x)$ are differentiable functions, and the following information is known about them:

$$f(2) = -3 \qquad f'(2) = 5 \qquad g(2) = 1 \qquad g'(2) = 2 \qquad g(0) = 2 \qquad g'(0) = 4$$

a) If $F(x) = \dfrac{f(x)}{g(x)}$, compute $F(2)$ and $F'(2)$.

b) If $G(x) = x^3 f(x) - 7g(x)$, compute $G(2)$ and $G'(2)$.

c) If $H(x) = \dfrac{3 + e^x}{g(x)}$, compute $H(0)$ and $H'(0)$.