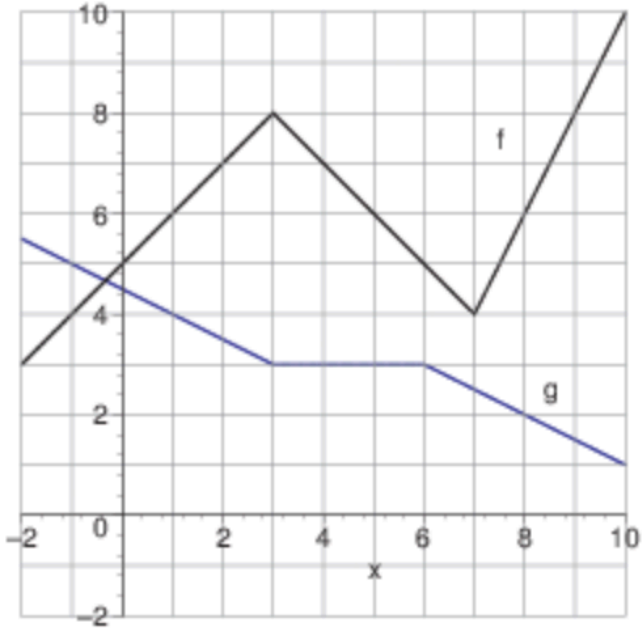
# TMATH 124: Quiz 5

Reasonable supporting work must be shown to earn credit.

1. [4] Use the graphs of $f$ and $g$ to find the following:




   (a) $(f \cdot g)'(4)$

   (b) $\frac{d}{dx}(f \circ g)(8)$

2. A population of 3000 bacteria is introduced into a culture and grows. The population of bacteria, $P$, after $t$ hours is modeled by

$$P(t) = 3000\left(1 + \frac{4t}{50 + t^2}\right).$$

   (a) [1] Find how many bacteria there are after two hours.

   (b) [3] Find the rate that the bacteria is growing after two hours.

   (c) [2] Find the line tangent to the graph of $P$ when $t = 2$.