Show all work, clearly and legibly, to receive full credit. Correct spelling, organization of your solution, and proper use of mathematical notation all count. You may use a calculator, but no notes, books, or other resources. Good luck!

1. (4 pts.) Given a function $f(x)$, you try to approximate $f'(3)$ by computing two slopes. The first slope uses the coordinates $(3, f(3))$ and $(3.1, f(3.1))$. The second coordinate uses the coordinates $(3, f(3))$ and $(3.05, f(3.05))$. Which slope do you predict will be closer to the exact value of $f'(3)$? Why?

   The one using $(3, f(3))$ and $(3.05, f(3.05))$:

   the closer the points are to each other, the more accurate the slope is.

2. (4 pts.) Suppose that $h(x) = 2f(x) + 3$. If you know that $f'(4) = 5$, then what is $h'(4)$?

   
   \[
   h'(x) = 2f'(x) + 0
   \]

   \[
   h'(4) = 2f'(4) + 0
   \]

   \[
   = 2 \cdot 5 + 0
   \]

   \[
   = 10
   \]

3. (2 pts.) Rewrite $fg^{-2}h$ as a fraction having no negative exponents.

   $\frac{fh}{g^2}$