1. (3pt) Find all solutions to $x^2 + 3x - 10 = 0$ and round to two decimal places.
   
   **Answer:** $x = 2$ and $x = -5$

2. Let $f(x) = \frac{4}{15}x + \frac{1}{5}$, let $g(x) = 3 + e^{-2x}$, and let $h(x) = 4 \ln(3x - 1) - 2$.
   
   (a) (2pt) Find all values of $x$ such that $f(x) = \frac{2}{3}$ and leave your answer in exact form.
   
   **Answer:** $x = \frac{7}{4}$

   (b) (2pt) Find the $y$-intercept of $y = g(x)$ and leave your answer in exact form.
   
   **Answer:** $(0, 4)$

   (c) (3pt) Find any $x$-intercepts of $y = h(x)$ and round to two decimal places.
   
   **Answer:** $(0.88, 0)$

3. Suppose that $F$ is some function such that $F(4) = 6$ and suppose that $G$ is some function such that $G(4) = -2$.

   (a) (1pt) Compute $(F - G)(4)$.
   
   **Answer:** $(F - G)(4) = 8$

   (b) (1pt) Compute $(F/G)(4)$.
   
   **Answer:** $(F/G)(4) = -3$

4. Let $f(x) = 3x - 4$ and let $g(x) = -x + 3$.

   (a) (3pt) Find and simplify $(f + g)(x)$.
   
   **Answer:** $(f + g)(x) = 2x - 1$

   (b) (3pt) Find and simplify $(fg)(x)$.
   
   **Answer:** $(fg)(x) = -3x^2 + 13x - 12$

5. (2pt) Each of the three plots below shows the graph of $y = f(x)$ and $y = g(x)$ but only one of them shows the correct graph of $y = (f + g)(x)$. Circle that plot. *Note that the dashed lines are not meant to express segmentation of the graph but rather to provide visual contrast between the three graphs.*

   **Answer:** The center plot contains the correct graph of $y = (f + g)(x)$. 