Exercise 1 (2 points)
Find $\delta > 0$ which satisfies $|f(x) - 8| < \frac{1}{2}$ when $|x - 1| < \delta$ where $f(x) = 3x + 5$

Exercise 2 (5 points)
Show that the equation $\cos x + x + 1 = 0$ has at least one real root.

Exercise 2 (3 points)
Show that the tangent lines of the curves $f(x) = \sqrt{x} + 1$ and $g(x) = -4x + 1$ at $x_0 = 3$ are perpendicular.
Exercise 1 (2 points)
Find $\delta > 0$ which satisfies $|f(x) + 2| < \frac{1}{2}$ when $|x + 3| < \delta$ where $f(x) = 2x + 4$

Exercise 2 (5 points)
Show that the equation $\sin x + x + 1 = 0$ has at least one real root

Exercise 2 (3 points)
Show that the tangent lines of the curves $f(x) = \sqrt{x - 1}$ and $g(x) = -4x + 10$ at $x_0 = 5$ are perpendicular.