1. Find an equation of the line that passes through the point \((2, 5)\) and is parallel to the line \(3y + 2x - 1 = 0\).
2. Use mathematical induction to show that
   \[2 + 4 + ... + 2n = n(n + 1).\]
3. Let \(f(x) = x^2 + 2x\). Fix \(x\) and evaluate
   \[
   \lim_{h \to 0} \frac{f(x + h) - f(x)}{h}.
   \]
4. Give an \(\epsilon, \delta\) proof that
   \[
   \lim_{x \to -2} |x + 1| = 1.
   \]
5. Find all discontinuities of the function
   \[
   f(x) = \begin{cases} 
   x^2 & x > 0 \\
   1 & x = 0 \\
   3|x| & -1 < x < 0 \\
   x + 2 & x \leq -1 
   \end{cases}
   \]
   and for each determine whether it is a removable discontinuity, a jump discontinuity or an infinite discontinuity.
6. Does
   \[
   \lim_{x \to 0} x \sin\left(\frac{1}{x^2}\right)
   \]
   exist? Evaluate it if it does.
7. Show that the equation
   \[2 \sin x - 2x^2 \cos x = 1\]
   has a solution in the interval \([0, \pi/2]\).
8. State whether the sequence converges and if it does find the limit.
   \[
   \frac{2^n + 1}{3^n + 2^n} \cdot \frac{(\sqrt{n} + 1) \sin n}{\sqrt{n}(10 + \sin \sqrt{n} + \sqrt{n})}
   \]