1. Determine the equation of the line that is tangent to the circle C at the point $(-1, 2)$, where C is the circle that is given by the equation

$$(x + 2)^2 + (y - 4)^2 = 5.$$

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2. Take f to be the quadratic function and L to be the line that are given by

$$f(x) = 3x^2 - 5x + 1 \quad \text{and} \quad L(x) = mx + b.$$

Identify a quadratic equation that determines m so that L is tangent to f at $(2, 3)$.

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3. Find the the equation of the line L tangent to $f(x) = 3x^2 - 5x + 1$ at $(2, 3)$.

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4. Determine the equation of the line L tangent to $f(x) = 10x^3 - 10x + 5$ at $(1, 5)$.

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