

Derivatives by the Limit Process #3 26-36

In Exercises 25–32, (a) find an equation of the tangent line to the graph of f at the indicated point, (b) use a graphing utility to graph the function and its tangent line at the point, and (c) use the *derivative* feature of a graphing utility to confirm your results.

25. $f(x) = x^2 + 1$, (2, 5)

26. $f(x) = x^2 + 2x + 1$, (-3, 4)

27. $f(x) = x^3$, (2, 8)

28. $f(x) = x^3 + 1$, (1, 2)

29. $f(x) = \sqrt{x}$, (1, 1)

30. $f(x) = \sqrt{x-1}$, (5, 2)

31. $f(x) = x + \frac{4}{x}$, (4, 5)

32. $f(x) = \frac{1}{x+1}$, (0, 1)

In Exercises 33–36, find an equation of the line that is tangent to the graph of f and parallel to the given line.

<u>Function</u>	<u>Line</u>
33. $f(x) = x^3$	$3x - y + 1 = 0$
34. $f(x) = x^3 + 2$	$3x - y - 4 = 0$
35. $f(x) = \frac{1}{\sqrt{x}}$	$x + 2y - 6 = 0$
36. $f(x) = \frac{1}{\sqrt{x-1}}$	$x + 2y + 7 = 0$