

Differentiability and continuity. Angle between curves.

3.3.1 Determine whether the function has a right-hand derivative, a left-hand derivative, and a derivative at the given value of x .

(a) $f(x) = x|1-x|$ at $x=1$

(b) $f(x) = (x+2)^{-3}(x^2-4)^4$ at $x=-2$

3.3.2 Find all value(s) of k such that the parabolas $y=2x^2-x$ and $y=x^2+kx-k$ intersect at a right angle at one of the points of intersection.