

Name: _____

Answer the following. Show your work for full credit.

SECTION

PROBLEMS

2.4

7-35, 45-65, 75-81 (odd)

1. Find the derivative $\frac{dy}{dx}$ for the following functions:

(a) $y = (x + 2)^8(x + 3)^6$

(b) $y = \frac{x}{\sqrt{9-x}}$

(c) $y = \sec(2x)$

(d) $y = \csc^5(2x^2)$

(e) $y = \sqrt[5]{x \tan x}$

(f) $y = \cot(3x^2 + 5)$

(g) $y = \cos(\tan x)$

(h) $y = (1 + \cos^2 x)^6$

(i) $y = \frac{\cos^2 x}{\sin x}$

(j) $y = \sin \sqrt{x}$

(k) $y = \sqrt{x^2 - 7x}$

(l) $y = \sin^3 x^2$

(m) $y = \sqrt{x + \sqrt{x}}$

2. Find an equation for the tangent line to the given function at the indicated point:

(a) $y = \tan^2 x; (\frac{\pi}{3}, \sqrt{3})$

(b) $y = x\sqrt{1+x^2}; (1, \sqrt{2})$

(c) $y = \sin(\sin x); (\pi, 0)$

(d) $y = \tan(\frac{\pi x^2}{4}); (1, 1)$