AUC apCalculus BC

Classwork Assignment 3/14

PROBLEM 1.2. *Find the following derivatives:*

(1) $\frac{d}{dx} \cos^7(4x^2 - 2x + 10)$.

(2) $\frac{d}{dx} \sqrt[5]{\sin^4(x^3) + 1}$.

PROBLEM 1.4. *Find the following derivatives:*

(1) $\frac{d}{dx} \sin^5(x^2 - 6x + 2)$.

(2) $\frac{d}{dx} \sqrt[3]{\cos^4(x^2) + 1}$.

PROBLEM 3.3. *Find the derivatives of the following function f at x:*

(3.1) $\qquad f(x) = x^2 \sin(x^3)$

(3.2) $\qquad f(x) = \sin(x^5)\cos(x^2 - 3x + 9)$

(3.3) $\qquad f(x) = \dfrac{\tan(x^2)}{\cot(x^2 + 1)}$

(3.4) $\qquad f(x) = \dfrac{x^2 - 3x}{x^4 - 4x^3 + x^2 - 1}$

(3.5) $\qquad f(x) = \dfrac{1}{\cos(x^7 - 5x - 1)}$

(3.6) $\qquad f(x) = \dfrac{\cos\left(\frac{1}{\cos(x^2)}\right)}{\tan\left(\frac{2x^5 - 1}{x^8 + 12}\right)}$

(3.7) $\qquad f(x) = \sin(\tan(\cos(\frac{1}{x^2 + 1})))$