

Quiz 3.1 MTHU241 Fall 2004

Name: _____

Please give your answers clearly in the space provided on this sheet. **Show work!**
This is a NO CALCULATOR quiz. Point total = 20

(1) (15 points) Use rules of differentiation to find the following derivatives.

(a) $\frac{d}{dx} \left(\frac{x^5}{10} + \frac{6}{x^3} + \sqrt{\pi} \right) =$ _____

(b) $\frac{d}{dt} \left(\frac{t^4 + 1}{t^2 + 2} \right) =$ _____

(c) $\frac{d}{dv} \left(\sqrt{v^4 + 16} \right) =$ _____

(d) $\frac{d}{dw} \left(\cos(w^5) \right) =$ _____

(e) $\frac{d}{dx} \left(x^2 \sin(x) \right) =$ _____

(2) (5 points) At the point $(x, y) = (2, 3)$, find the equation of the tangent line to the curve whose equation is $x^3y - 2y^2 = 6$. Answer: _____

SHOW ALL WORK

Quiz 3.2 MTHU241 Fall 2004

Name: _____

Please give your answers clearly in the space provided on this sheet. **Show work!**
This is a NO CALCULATOR quiz. Point total = 20

(1) (15 points) Use rules of differentiation to find the following derivatives.

(a) $\frac{d}{dx} \left(\frac{x^7}{21} + \frac{4}{x^8} - \sqrt{\pi} \right) =$ _____

(b) $\frac{d}{dt} \left(\sqrt{t^4 + 81} \right) =$ _____

(c) $\frac{d}{dv} \left(\frac{v^4 + 3}{v^2 + 5} \right) =$ _____

(d) $\frac{d}{dw} \left(\sin(w^2) \right) =$ _____

(e) $\frac{d}{dx} \left(x^5 \cos(x) \right) =$ _____

(2) (5 points) At the point $(x, y) = (3, 2)$, find the equation of the tangent line to the curve whose equation is $4x^2y - 3y^4 = 24$. Answer: _____

SHOW ALL WORK

Quiz 3.3 MTHU241 Fall 2004**Name:** _____

Please give your answers clearly in the space provided on this sheet. **Show work!**
This is a NO CALCULATOR quiz. Point total = 20

(1) (15 points) Use rules of differentiation to find the following derivatives.

(a) $\frac{d}{dx} \left(\frac{8}{x^4} - \frac{x^9}{21} + \sqrt{\pi} \right) =$ _____

(b) $\frac{d}{dt} \left(\frac{1}{\sqrt{t^2 + 25}} \right) =$ _____

(c) $\frac{d}{dv} \left(\frac{v^4 - 1}{v^2 + 1} \right) =$ _____

(d) $\frac{d}{dw} (\sin(3w^5)) =$ _____

(e) $\frac{d}{dx} (x^2 \cos(4x)) =$ _____

(2) (5 points) At the point $(x, y) = (2, 4)$, find the equation of the tangent line to the curve whose equation is $4x^2y - 3y^2 = 16$. Answer: _____

SHOW ALL WORK