Chapter 02_Assignment

Ex 1: Find y'

a/ $y = x^2 - x\sqrt{x} + \frac{1}{x} + 2$

b/ $y = \sqrt{x + \sqrt{x}}$

c/ $y = x\sqrt{x+2}$

Chapter 02_Assignment

Ex 1: Find y'

d/ $y = \dfrac{x^2}{x+1}$

e/ $y = \ln\left(x^2+1\right) - \dfrac{1}{x}$

f/ $y = e^x \sin\left(2x+1\right)$

Chapter 02_Assignment

Ex 2: Find y''

a/ $y = xe^{3x-1}$

b/ $y = \sqrt[3]{2x+1}$

c/ $y = e^{-x}\cos x$

Chapter 02_Assignment

Ex 3: Find y'

a/ $f(x) = \pi^{40}$

b/ $g_1(a) = (3a+1)^2$; $g_2(a) = (3a+1)^{20}$

c/ $h_1(x) = \sqrt{x}(x-2x)$; $h_2(x) = \sqrt{x}(x+1)^{10}$

Chapter 02_Assignment

Ex 3: Find y'

d/ $f_1(x) = \dfrac{\sqrt{x} + x}{x^2}$; $\quad f_2(x) = \dfrac{x^2}{\sqrt{x} + x}$

e/ $f(t) = t^3 \cos(t)$; $\quad h(t) = \sqrt{t} \sin t$

f/ $f_1(t) = \sin t + \pi \cos(t)$; $\quad f_2(t) = \sin t \cos(\pi t)$;

Chapter 02_Assignment

Ex 4: Find y'

a/ $y = f(x) = \sin^4(3x)$

b/ $y = f(z) = z\sin\left(\frac{1}{z}\right)$

c/ $y = f(x) = \left(2 + \sqrt[3]{(2x+3)^2}\right)^5$

Chapter 02_Assignment

Ex 5:

Find an equation of the tangent line to the curve at the given point

a/ $y = 3 - 2x + x^2$ **at** $x = 1$

b/ $y = \dfrac{x-1}{x-2}$ **at** $(3,2)$

c/ $y = \dfrac{3-2x}{x-1}$ **at** $y = -1$

Chapter 02_Assignment

Ex 6:

Find an equation of the tangent line and normal line to the curve at the given point:

a/ $y = 3 - 2x + x^2,\ x = 1$

b/ $y = \dfrac{2x}{x^2 + 1}$ at $(0,0)$

c/ $y = \dfrac{3 - 2x}{x - 1},\ y = -1$

Chapter 02_Assignment

Ex 7:

Each limit represents the derivative of some function f some number a . State such an f and a in each case

a/ $\lim\limits_{h\to 0}\dfrac{(1+h)^{10}-1}{h}$

b/ $\lim\limits_{x\to 5}\dfrac{2^x-32}{x-5}$

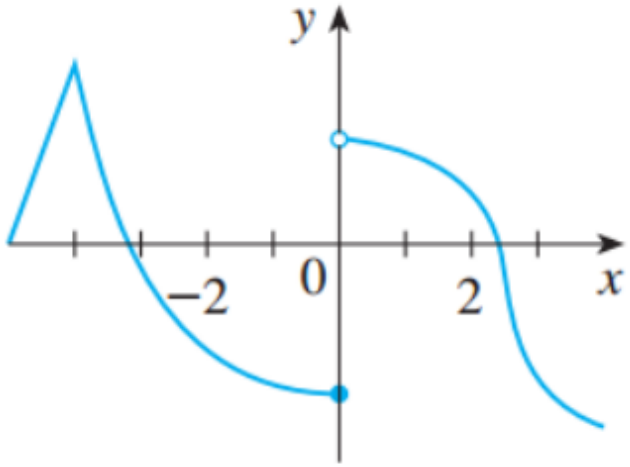
c/ $\lim\limits_{h\to 0}\dfrac{\cos(\pi+h)+1}{h}$

Chapter 02_Assignment

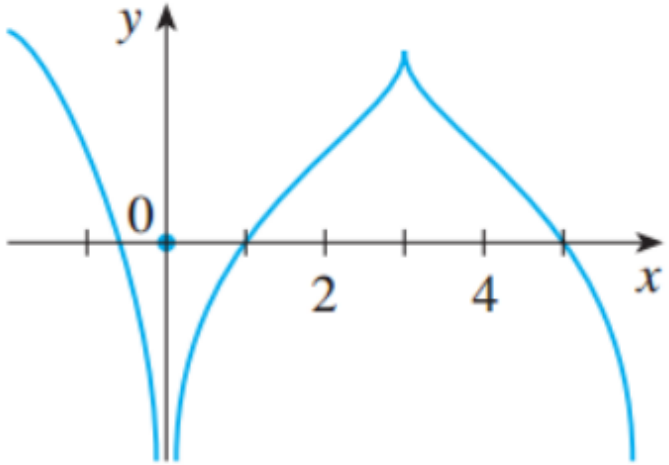
Ex 8:

The graph of is given. State the numbers at which is not differentiable

a.



b.



Chapter 02_Assignment

Ex 9:

Use the given graph to estimate the value of each derivative

a/ $f'(-3)$

b/ $f'(-1)$

c/ $f'(0)$

d/ $f'(3)$