Review problemsSome corrections to the original,
written in blue.Part I : fast recallwritten in blue.Differentiate:
nulei1) Differentiate:
a)
$$\times^{27}$$
f) cosx
g) tanx
b) Jx b) Jx g) tanx
h) tan'x
i) $ln(sinx)$
g) lnx

approx. [2] Estimate sin(0.02) w/ linear approximation.

optim-
ization (3) Find the maximum and minimum of
$$f(x) = e^{x} \times on (-\infty, \infty)$$
.
(4) Find the maximum and minimum of $f(x) = x^{2} \cdot 3 \times on [0, 2]$.
(5) Sketch the graph of $f(x) = x^{3} \cdot 3 \times$.
(6) Evaluate $\lim_{x \to -\infty} \frac{e^{x} + 1}{e^{x} - 1}$ and $\lim_{x \to \infty} \frac{e^{x} + 1}{e^{x} - 1}$.

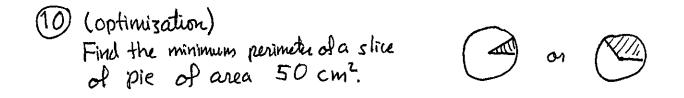
related The Suppose f, g are functions such that f(t)g(t) = t for all t, $f(0) = \bigotimes_{i=1}^{7} g(0) = \bigotimes_{i=1}^{7} and f'(0) = 1$. Find g'(0).

b)
$$\frac{e^{x} \int \sin x}{(x+U^{7} (x-z)^{9})}$$

d)
$$e^{x^{2}} ln(7x+1)$$

$$(\mathfrak{P})$$

b) Find the maximum perimeter of such a right triangle with hypotenus of length 1.



b) Find the tangent line to $y^2 = x^3 - x$ at the point (2, 16).

(Z) (graphing) Sketch the graph of f(x) = *** x.e-x2 you may assume that $\lim_{x \to \infty} f(x) = 0$ (we haven't covered now to evaluat these limits in detail).

-Find all local extrema, and determine where the function is increasing and decreasing. -Determine where it is concave up or down. -Give a rough sketch from this information.

13 (graphing) Skutch the graph of $f(x) = \frac{-3x^2 + 4x}{x^2 - 4}$.

-Find all vertical asymptotes, with the limits on both sides. -Find all horizontal asymptotes. -Give a rough sketch from this information. (14) (Related rates)

A certain town has a workforce of 50,000 people, of whom 10% are unemployed. Suppose that the workforce is growing at a rate of 900 people per month, and 400 new jobs are being created per month. What is the rate of change of the unemployment rate (expressed in percent per month)?