

CALCULUS WORD PROBLEMS

Related Rates 2.6

Optimization 3.7

variables

usually several variables
always includes t
unless specified, all change w/ time

if more than two,
use secondary to subst for one.

derivative

always WRT $t = \text{time}$
chain rule $\frac{d(\text{var})}{dt}$ for every variable

WRT independent variable

solve for

rate requested

variable requested.

method

differentiate, subst, isolate.

differentiate

find CV

1st or 2nd deriv test to confirm
max or min.

special notes!

no secondary eq'n.

primary = function to differentiate ^(calc)
secondary = eq'n with value, solve
+ subst (algebra)

time is always essential

time is not usually included

units:

per min (or sec or hour...)

as given in question