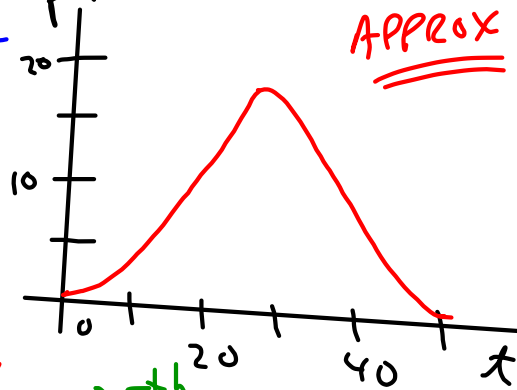


THUR 10-27-05 $p'(SLOPE)$

(18) a) "ESTIMATES"

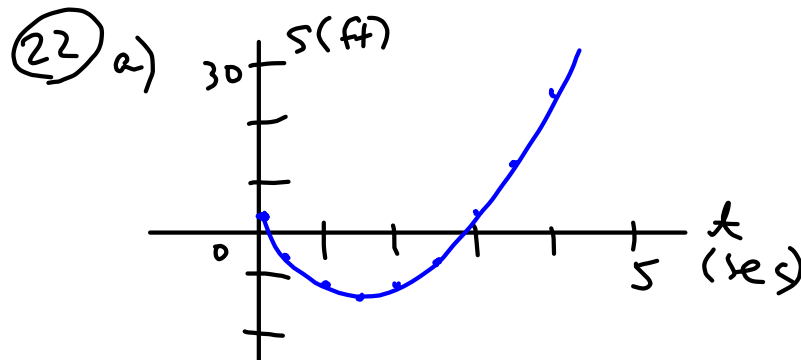
HORIZONTAL: DAYS

VERTICAL: FLIES PER DAY



b) FASTEST: AROUND THE 25th DAY

SLOWEST: DAY 0 OR DAY 50



$$s'(1) = -6$$

$$s'(2.5) = 12$$

$$s'(3.5) = 24$$

② a) DISCUSS IN GROUPS

1) SPEED UP: $1.153 \leq t \leq 2.167$

AND $t \geq 3.180$

SLOWS DOWN: $0 \leq t \leq 1.153$

AND $2.167 \leq t \leq 3.180$

c) $t \doteq 1.153 \text{ sec} \ \& \ t \doteq 3.180 \text{ sec}$

d) $t \doteq 1.153 \ \& \ 3.180 \text{ sec}$

e) DISCUSS IN GROUPS

f) AT $t \doteq 1.626 \text{ sec} \ \& \ 4.129 \text{ sec}$

3.5 TRIG

$$\frac{d(\sin x)}{dx} = \cos x$$

$$\frac{d(\cos x)}{dx} = -\sin x$$

$$\frac{d(\tan x)}{dx} = ?$$

.

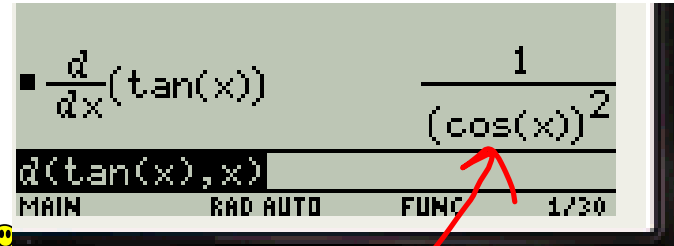
$$\frac{d(\tan x)}{dx} = ? \frac{d \frac{\sin x}{\cos x}}{dx} \quad * \text{QUOTIENT RULE}$$

$$= \frac{\cos x \cdot \cos x - \sin x (-\sin x)}{\cos^2 x}$$

$$= \frac{\cos^2 x + \sin^2 x}{\cos^2 x}$$

$$= \frac{1}{\cos^2 x}$$

$$= \sec^2 x$$



$$\frac{d(\tan x)}{dx} = \sec^2 x$$

$$\begin{aligned} \frac{d(\csc x)}{dx} &= \frac{d\left(\frac{1}{\sin x}\right)}{dx} \\ &= \frac{\sin x \cdot 0 - 1 \cdot \cos x}{\sin^2 x} \\ &= \frac{-\cos x}{\sin^2 x} \end{aligned}$$



$$\begin{aligned} &= -\frac{\cos x}{\sin x} \cdot \frac{1}{\sin x} \\ &= -\cot x \cdot \csc x \end{aligned}$$

$$\frac{d(\csc x)}{dx} = -\cot x \cdot \csc x$$

C.Y.O.F.

```
■ Define cr(x)=x1/3 Done
Define cr(x)=x^(1/3)
MAIN      RAD AUTO  FUNC  1/30
```

CREATE YOUR OWN FUNCTION

H.B. \$2.25 4

FRIES \$1.50 3

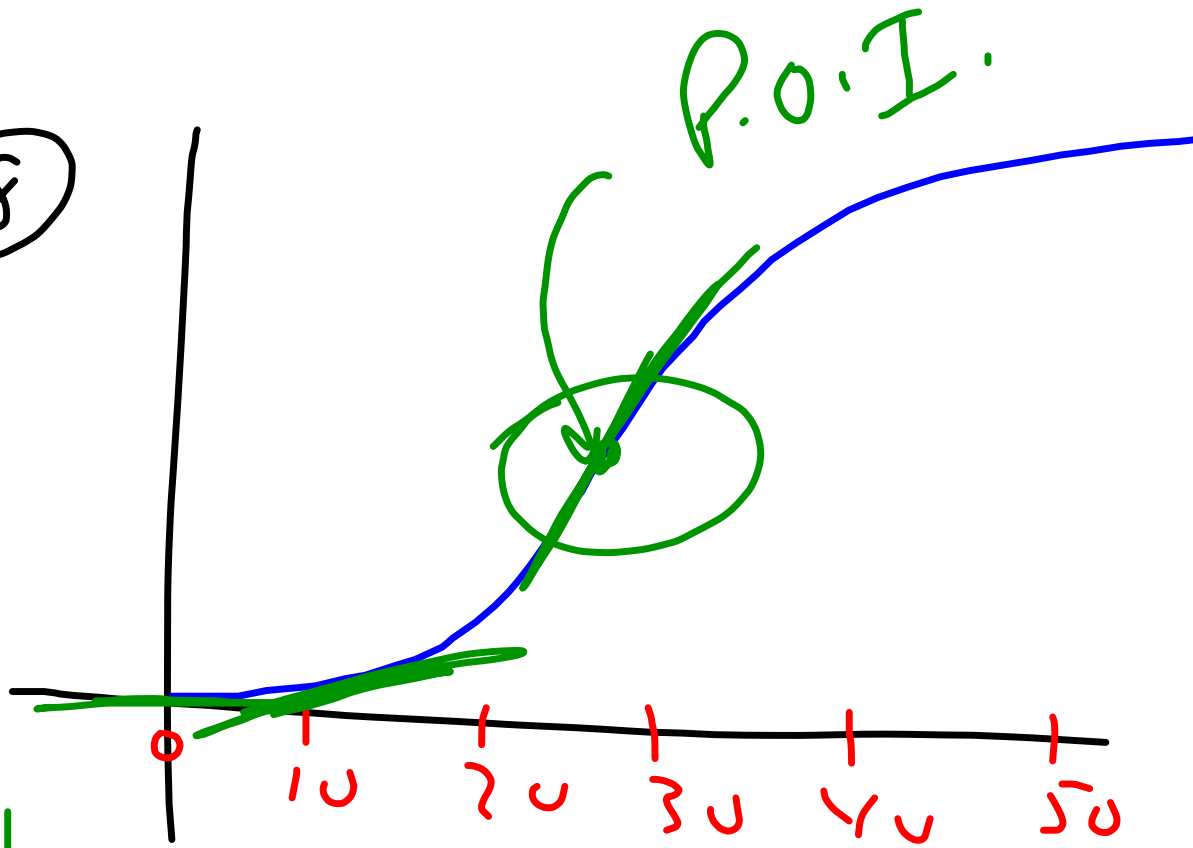
MILK SHAKE \$1.75 2

$$\text{COST}(H, F, MS) = 2.25H + 1.5F + 1.75MS$$

```
■ Define cr(x) = x1/3 Done
■ Define cost(h, f, ms) = 2.25h + 1.5f + 1.75ms Done
■ cost(4, 3, 2) 17.
cost(4, 3, 2)
MAIN RAD AUTO FUNC 3/30
```

FUNCTION OF 3 VARS.

18



0	4
0	2
10	1
20	3

25

O.T.L.

· CORRECT TODAY'S O.T.L.

· DERIVE: $\frac{d(\cot x)}{dx}$; $\frac{d(\sec x)}{dx}$

· P.133 31