

FRI 03-10-06

$$\int \frac{\tan(\ln y)}{y} dy$$

LET $u = \ln y$

$$\frac{du}{dy} = \frac{1}{y}$$

$dy = y \cdot du$

P. 35B #13

$$= \int \frac{\tan u}{\cancel{y}} \cdot \cancel{y} \cdot du$$

$$= \int \tan u \cdot du$$

$$= \int \frac{\sin u}{\cos u} du$$

$w = ?$

↑ "DUPLICATE"

$$= \int \frac{\sin u}{\cos u} du = \int \frac{w}{\cos u} \cdot \frac{dw}{\cos u}$$

$$w = \sin u$$

$$\frac{dw}{du} = \cos u$$

$$\frac{dw}{\cos u} = du$$

$$= \int \frac{w \cdot dw}{\cos^2 u}$$

WORSE!

TRY A

DIFF. w.

$$= \int \frac{\sin u}{\cos u} du = \int \frac{\cancel{\sin u}}{w} \cdot \frac{dw}{\cancel{-\sin u}}$$

$$w = \cos u$$

$$\frac{dw}{du} = -\sin u$$

$$\frac{dw}{-\sin u} = du$$

$$= - \int \frac{1}{w} \cdot dw$$

$$= -\ln|w| + C$$

$$= -\ln|\cos u| + C$$

$$= -\ln|\cos(\ln y)| + C$$

$\int \left(\frac{\tan(\ln(y))}{y} \right) dy$
 $= -\ln(\cos(\ln(y)))$
 $\int(\tan(\ln(y))/y, y)$
 MAIN RAD AUTO FUNC 1/30

ANSWER PAGE

AP COOL MINT GREEN

(87) D

(88) C

(89) B

(90) D

P. 338

(2) $y(x) = 200 \cdot e^{-0.5x}$

(8) $r = 7.2\%$; 9.63 yrs.

(12) 1250 INITIALLY

P. 347-9

(16) a) 10.319 yrs.

b) 44.382 yrs.

$$(21) \frac{dy}{dx} = 1000 + \frac{1}{10}x ; x(0) = 1000$$

$$dx = (1000 + \frac{1}{10}x) \cdot dt$$

$$\frac{\frac{1}{10} \cdot dx}{1000 + \frac{1}{10}x} = dt \cdot \frac{1}{10}$$

$$\frac{dx}{10,000 + x} = \frac{1}{10} dt$$

$$\int \frac{1}{10,000 + x} dx = \frac{1}{10} \int dt$$

$$\ln |10000 + x| + C_1 = \frac{1}{10}t + C_2$$

$$\ln |10000 + x| = \frac{1}{10}t + C_3$$

$$\log_e |10000 + x| = \frac{1}{10}t + C_3$$

$$e^{\frac{1}{10}t + C_3} = |10,000 + x|$$

$$e^{\frac{1}{10}t} \cdot e^{C_3} = |10,000 + x|$$

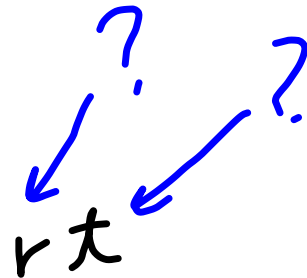
$$A \cdot e^{\frac{1}{10}t} = |10,000 + x|$$

$$A \cdot e^{\frac{1}{10}t} - 10000 = x$$

o
o
o
FINISH

$$\textcircled{16} \quad A = P_0 \cdot e^{rt}$$

$$1000 = 10,000 \cdot e^{rt}$$



NO HELP.

LOSING 20% A YR. → ~~GAINING~~ 80%
MAINTAINING

NO
✓

$$A = A_0 \cdot (.8)^t$$

10000 1000

↑ ↑

FOCUS FOR X.

AP 90

ON MONDAY

O.T.L. p. 338-9 4, 6, 9, 25

P. 358-9 3, 4, 7, 9, 23, 48

(CHAR. REVIEW: ALL ANSWERS IN BOOK)

· AP. P. 125 2003 FORM B # 6
(NOTE: PARTS a & b ARE INDEPENDENT)

TEST 6.1, 6.2, 6.4, 6.5 ON THURSDAY:
7:40 - 8:30