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ASSIGNMENT #8
BUSINESS MATHEMATICS
SOLUTIONS - FALL 2009

P. 393 # 19

$$\text{At } t=0 \text{ (1990)} \quad y = 100000$$

$$\text{So } y = 100000 e^{ht}$$

$$\text{IN 2000 ; } t=10 \quad y = 110517$$

$$\text{So } 110517 = 100000 e^{10h}$$

$$1.10517 = e^{10h}$$

$$\ln(1.10517) = \ln e^{10h}$$

$$0.09999 = 10h$$

$$h = 0.00999$$

$$y = 100000 e^{0.00999t}$$

$$\text{IN 2015 ; } t=25$$

$$y = 100000 e^{0.00999(25)}$$

$$= \boxed{128402} \text{ (Approx)}$$

P. 412

2 $P = 800$
 $t = 5$
 $r = 0.14$

(a) $I = Prt = 800(0.14)5 = \boxed{560}$

(b) $S = P + I = 800 + 560 = \boxed{1360}$

4 $P = 1800$
 $r = 0.15$
 $t = 9/12 = 0.75$

(a) $I = Prt = 1800(0.15)(0.75)$
 $= \boxed{202.50}$

(b) $S = P + I = 1800 + 202.50 = \boxed{2002.50}$

6 $P = 1600$
 $r = 0.14$
 $t = 2$

$S = P + I = P + Prt$
 $= 1600 + 1600(0.14)2$
 $= \boxed{2048}$

8 $P = 2500$
 $t = 7/12$
 $r = 0.09$

$S = P + Prt$
 $= 2500 + 2500(0.09)(7/12)$
 $= \boxed{2631.25}$

9 The couple MATE $3\$ + 0.90\$$
 so $I = 3.90$

$3.90 = 30rt$

$3.90 = 30r(1)$

$r = \frac{3.9}{30} = \boxed{0.13}$