Section 3.7(Hints)

19. The current is $\frac{dQ}{dt}$.

24. Solve a, b from $20 = f(0)$ and $12 = f'(0)$. Calculate $\lim_{t\to\infty} f(t)$ to get some information about the population in the long run.

30.
(a) This gives the rate at which costs are increasing with respect to the production level when $x = 100$ and predicts the cost of the 101st item.
(b) The actual cost of 101st item is $C(101) - C(100)$.

31.
(a) $A'(x) > 0$ implies that the average producitivity increases as new workers are added.
(b) None.

35.
(a) Stable populations means that the growth rates of all species are 0.
(b) None.