p. 98 #5, 6 p. 100 #4-9

#5. $2989 = P\left(1+\frac{0.06}{4}\right)^{4(3)}$

$2989 = P(1.015)^{12}$

$\frac{2989}{1.196} = \frac{1.196P}{1.196}$

$P = 2500$

#6. $3580.11 = 2500\left(1+\frac{0.06}{12}\right)^{12x}$

$\frac{3580.11}{2500} = \frac{2500(1.005)^{12x}}{2500}$

$1.432 = 1.005^{12x}$

$\log_{1.005} 1.432 = 12x$

$\frac{72}{12} = \frac{12x}{12}$

$x = 6$

p. 100

#4. $y = 425(0.96)^x$

$= 425(0.96)^5$

$= 346.5$

347 whales

$2020 - 2015 = 5$

$0.96^5 = 0.815372698$

$425(0.8)$

$= 340$

#5. $y = 2c^x$

$\frac{77}{2} = \frac{2c^9}{2}$

$\sqrt[9]{38.5} = c^9$

$1.50 = c$

$y = ac^{bx}$

$y = 2(1.5)^x$

$= 2(1.5)^{19}$

$= 4434$

#6. $y = ac^{bx}$

$y = a(2)^{\frac{1}{3}x}$

$2840 = a(2)^{\frac{1}{3}(a)}$

$2840 = a(2)^3$

$\frac{2840}{8} = \frac{8a}{8}$

$355 = a$

$y = 355(2)^{\frac{1}{3}x}$

$y = 355(2)^{\frac{1}{3}(12)}$

$= 5680$

#7. $y = 400c^x$

$2022 - 2015 = 7$

$\frac{432}{400} = \frac{400c^7}{400}$

$\sqrt[7]{1.08} = c^7$

$1.01105 = c$

$1.01105 = 1 + \%$

$0.01105 = \%$

$\times 100\%$

1.105%

1.105% growth

p.101

#9. Can: $y = 350\,000(1.012)^{10}$

$= 394\,342$

USA: $y = 425\,000(1.007)^{10}$

$= 455\,705$

Together $= 350\,600 + 425\,000$

$= 775\,000$

After $= 394\,342 + 455\,705$

$= 850\,047$

$$\frac{850\,047}{775\,000} = \frac{775\,600\,c^{10}}{775\,000}$$

$$\sqrt[10]{1.0968} = c^{10}$$

$$1.00928 = c$$

% growth 0.93%