

Ch. 6 Review

$$1. \frac{2}{3}x^3 + \frac{x^2}{2} - x + C$$

$$2. \frac{2}{3}\sqrt{x^3 + 3} + C$$

$$3. \frac{\ln^4 x}{4} + C$$

$$4. -2\sqrt{\cos \theta} + C$$

$$5. \frac{1}{2}x^2 - \frac{1}{x} + C$$

$$6. -\cos(3x) + C$$

$$7. \sin\left(\frac{\pi}{2}x\right) + C$$

$$8. \frac{\ln^2 6}{2} - \frac{1}{2}$$

$$9. -\frac{1}{2}$$

$$10. -\frac{5}{16} + \frac{1}{2}$$

$$11. y = \frac{\sin^4 x}{4} + 2$$

$$12. y = 2e^{x^2 + 8x}$$

$$13. a) \frac{dP}{dt} = kP$$

$$b) P(t) = 800e^{\frac{\ln 3}{20}t}$$

$$c) P(72) \approx 41,756 \text{ people}$$

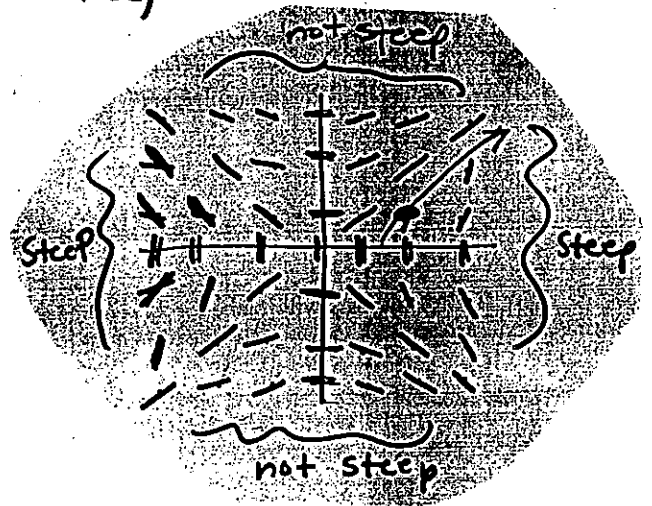
$$d) t \approx 41.918 \text{ hrs.}$$

$$14. a) \frac{1}{2} \text{ life} \approx .301 \text{ yrs.}$$

$$b) t \approx .8248 \text{ yrs.}$$

$$15. \approx 3:03 \text{ p.m.}$$

16. a)



$$b) y = \sqrt{x^2 - 3}$$