

8.2 Integration by Sight

P. 356 1-53 (odd)

Ex. 2. $f'(x) = x + 1 + x^{-1} + x^{-2}$
 $f(x) = \frac{1}{2}x^2 + x + \ln|x| - x^{-1} + C$

4. $dy = (20x + 3)dx$
 $y = 10x^2 + 3x + C$

6. $dy = (e^{2x} + e^{-2x})dx$
 $y = \frac{1}{2}e^{2x} - \frac{1}{2}e^{-2x} + C$

8. $(-2, -3)$ $f'(x) = 4x^3 - 3x^2$
 $f(x) = x^4 - x^3 + C$
 $-3 = (-2)^4 - (-2)^3 + C$
 $-3 = 16 + 8 + C$
 $-27 = C$
 $f(x) = x^4 - x^3 - 27$

10. $\int 14 dx$
 $= 14x + C$

12. $\int 12x dx$
 $= 6x^2 + C$

14. $\int r^{\frac{3}{2}} dr$
 $= \frac{5}{8} r^{\frac{5}{2}} + C$

16. $\int 14w^{\frac{4}{3}} dw$
 $= 6w^{\frac{7}{3}} + C$

18. $\int 9g^{-\frac{1}{4}} dg$
 $= \frac{4}{3} 9g^{\frac{3}{4}} + C$

20. $\int \frac{1}{m} dm$
 $= \ln|m| + C$

22. $\int x^4(x^2-1)dx$
 $= \int x^6 - x^4 dx$
 $= \frac{1}{7}x^7 - \frac{1}{5}x^5 + C$

24. $\int (4-3t)(2t-1)dt$
 $= \int -6t^2 + 11t - 4 dt$
 $= -2t^3 + \frac{11}{2}t^2 - 4t + C$

32. $\int \sin 3x dx$
 $= -\frac{1}{3} \cos 3x + C$