Practice 1

1. 1
2. $\int_8^4 x^5\,dx$

3a $\sqrt{5+6x^2}$

3b $2x\sqrt{5+6x^4}$

4a $-\frac{3}{4}\cos(x^{4/3}+8)+C$

4b $\frac{1}{2}t^2-\frac{2}{3}t^{3/2}+C$

4c $\frac{2}{5}(y^3+1)^{5/2}-\frac{2}{3}(y^3+1)^{3/2}+C$

4d. $\frac{1}{3}\tan^3\theta+C$

5a $\ln\frac{1+e}{2}$

5b $3/4$

5c 0

6 $68/5$

A $\pi/16$

B $2\ln 2$

Practice 2

1. $\frac{5}{3}\cdot 4+\frac{5}{7}\cdot 4+\frac{5}{11}\cdot 4+\frac{5}{15}\cdot 4+\frac{5}{19}\cdot 4+\frac{5}{23}\cdot 4$
2. $\int_3^5 x^9\,dx$

3a $\sqrt{3+4x^2}$

3b $\sqrt{3+4(\tan x)^2}\cdot\sec^2 x$

4a $\theta^2+\theta+\sin(2\theta+1)+C$

4b $-t^{-1}-t^{-2}+C$

4c $-\frac{1}{2}(\ln y)^{-2}+C$

5a -1

5b $1/6$

6. $686/3$

A. $\sqrt{3}\pi/3$

B. $538/15$

Practice 3

1. $\frac{3}{4^2}\cdot 4 + \frac{3}{8^2}\cdot 4 + \frac{3}{12^2}\cdot 4 + \frac{3}{16^2}\cdot 4 + \frac{3}{20^2}\cdot 4$

2. $\int_2^8 x^3\,dx$

3a $\sqrt{5+17x^3}$

3b $\sqrt{5+17(\ln x)^3}\cdot\frac{1}{x}$

4a $\sqrt{20-\pi}+\tan(20-\pi)+C$

4b $\frac{1}{3}t^3+4t^{-1}+C$

4c $\sin(\ln y)+C$

5a $1-2\sqrt{3}/3$

5b 18

6 $22/15$

A $\sqrt{3}\pi/24$

B $-4/15$