Set 7 Answers (For #2b and 3b, the 'n' is a strange looking 'pi')

1)

a) ln2
b) k = $\sqrt{2}$
c) $\frac{1}{\sqrt{6}}\ln 2$

2)

a	13/6
b	(158/15)n

3)

a	ln 2
b	n[(√3)-(n/3)]

4)

a	$\frac{\pi}{4}-\frac{1}{2}$
b	$\pi\int_0^{\frac{\pi}{4}}(\frac{\sec^4 x}{4}-\tan^4 x)dx$

5)

a	$\frac{64\pi}{3}$
b	$\pi\int_0^4\left[y^2-\left(\frac{y^4}{64}\right)^2\right]dy$

6)

a	$e-\frac{4}{3}$
b	$\pi\left(\frac{e^2}{2}-\frac{7}{10}\right)$

7) a) $\frac{2}{3}+\frac{2}{\pi}$

b) $\pi\int_0^1[(1+\sin(\pi x))^2-x^4]dx$

8)

a	2
b	$\frac{25}{4}$
c	$\ln\frac{9}{4}$

9)

a) 3.214 or 3.215
b) 31.884 or 31.885
c) 8.997

10)

a	(2,4) (4,16 (-0.767, 0.588) or (-0.766, 0.588)
b	$\int_0^{0.588}2\sqrt{y}dy+\int_{0.588}^4\left(\sqrt{y}-\frac{\ln y}{\ln 2}\right)dy+\int_4^{16}\left(\frac{\ln y}{\ln 2}-\sqrt{y}\right)dy$ $\int_{-0.767}^2(2^x-x^2)dx+\int_2^4(x^2-2^x)dx$
c	$\int_{-0.767}^2\left((5-x^2)^2-(5-2^x)^2\right)dx$

11)

a	18
b	212.057 or 212.058
c	407.150

12)

a. 1.296
b. 3.233
c. $\pi\int_0^{\ln 3}\left(e^y-3\right)^2dy$