Solutions to review for exam 4.

(1)

(A) $-\frac{1}{2x^2} + 2\cos x - \ln|x| + xy + C$

(B) $2\arcsin(u) + C$

(C) $\frac{t^3}{3} - \frac{A}{t} + C$

(D) $5e^t + 7t + C$

(2)

(A) $-\sin(x)\sin(\cos^2(x))$

(B) $-2x(x^2+1)^{100}$

(3)

0 (since $x^5\cos(x^2)$ is odd).

(4) $\frac{2}{\pi}(\ln(\frac{3\pi}{2}) - 2.5 - \ln(\pi))$

(5) $1 + \frac{\pi}{4}$

(6)

(A) -4

(B) -4

(C) $-31 + 3(b-a)$

(7) $W(x) = 2e^x + x$

(8)

(A) $f(1)$

(B) $x = 0$ and $x = 4$

(C) $y = 2$ and $y = -1$ respectively.

(9)

(A) $x = -3$ and $x = 3$

(B) $x = 0$

(C) $x = 3$

(D) $x = -3$

(10) 60

(11)
(A) $t = \frac{30}{9.8}$ second, $S(\frac{30}{9.8}) = -\frac{9.8}{2}(\frac{30}{9.8})^2 + \frac{(30)^2}{9.8} + 40$ meter

(12) $\frac{7}{100}$

(13)
$(106 - 3e^{-3})$ liter.