CS370 Midterm F2002

1. [Not covered]

2. a) $q(0) = 0 + a_1(0)^2$

$= 0$

$q'(0) = 1 + 2a_1(0)$

$= 1$

$q(1) = a_2(1-1)^2 + 1$

$= 1$

$q'(1) = 2a_2(1-1)$

$= 0$

b) $P_1(2/3) = P_2(2/3)$

$\frac{2}{3} + \frac{4}{9}a_1 = \frac{1}{9}a_2 + 1$

$4a - b = 3$

c) $P_1'(2/3) = P_2'(2/3)$

$1 + \frac{4}{3}a_1 = -\frac{2}{3}a_2$

$4a + 2b = -3$

d) $4a - b = 3$

$-4a + 2b = -3$

$-3b = 6$

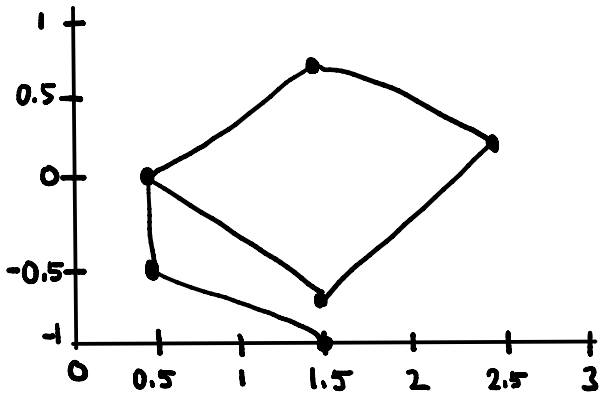
$b = -2$

$a = 1/4$

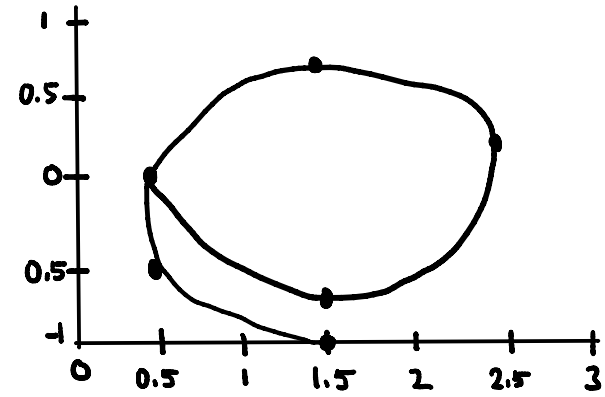
e) $q(x_2) = \frac{2}{8} + \frac{1}{4}\left(\frac{2}{2}\right)^2$

$= 7/9$

3. a)



b)



c) [Not covered]

d) [Not covered]

4. a) $E = \frac{1}{2}\beta^{1-t}$

$= 5^{-} \cdot 10^{-4}$

b) $0.0001 \cdot 10^{-3}$

c) $0.1284 \cdot 10^{-2}$

d) $9.123 \oplus 3.714$

$$= 0.9123 \cdot 10^1 + 0.3714 \cdot 10^1$$

$$= fl(1.2837 \cdot 10^1)$$

$$= 0.1284 \cdot 10^2$$

5. [Not covered]

6. [Not covered]

7. [Not covered]