Data from an unknown function $y = f(x)$ is shown in the table below.

x	y
0	1
1	2
2	5
3	8

1. The equation $\hat{y} = 2x + 1$ is being used for interpolation of the function. The sum of the squares of the errors $e_i = y_i - \hat{y}_i,\ i = 1,2,3,4$ is (3pts)

   a) 0 b) 2 c) 1.5 d) 4 e) 1.8 f) none of the above

   yhat = 1 3 5 7
   e = 0 -1 0 1
   esq = 0 1 0 1
   sum_esq = 2

2. The Least Squares line thru the data points is $\hat{y} = a_0 + a_1 x$ where (4 pts)

   a) $a_0 = 1,\ a_1 = 2$ b) $a_0 = 0.8,\ a_1 = 2.1$ c) $a_0 = 1.5,\ a_1 = 2.5$

   d) $a_0 = 0.75,\ a_1 = 2.5$ e) $a_0 = 0.4,\ a_1 = 2.4$ f) none of the above

A =
   4 6
   6 14

b = 16 36

a =
   0.4000
   2.4000

3. SST and SSE for the Least Squares line are (3 pts)

a) SST=30, SSE=1.2 b) SST=18, SSE=2.4 c) SST=24, SSE=1.5
d) SST=36, SSE=3.0 e) SST=10, SSE=1.1 f) none of the above

yhat = 0.4000 2.8000 5.2000 7.6000

e = 0.6000 -0.8000 -0.2000 0.4000

SSE = 1.2000

ybar = 4

SST = 30

4. The correlation coefficient *r* is (2 pts)

a) 0.9798 b) 0.8667 c) 0.9375 d) 0.9167 e) 0.8915 f) 1
g) none of the above

SSR = 28.8000

r = 0.9798

5. Using the Least Squares Line to predict the value of *y* when $x = 1.5$ results in

a) $y = 3$ b) $y = 2.5$ c) $y = 4$ d) $y = 4.5$ e) $y = 3.5$
f) none of the above

(3 pts)

y = 4.0000