Chi –Square and Measures of Association Answers

1)

O	E	(O-E)	$(O-E)^2$	$(O-E)^2/E$
40	65.10	-25.10	630.01	9.68
210	184.90	25.10	630.01	3.41
85	59.90	25.10	630.01	10.52
145	170.10	-25.10	630.01	3.70
				$\Sigma = 27.31$

a) There is a relation between wearing seatbelts and car fatalities. X^2 (1, 480) = 27.31, $p < .05$. The effect size is .24

b) P(fatal) = 125/480 = .26. This is a marginal probability

c) P(fatal/don't wear) = 85/230 = .37. This is a conditional probability

2)

The percentage agreement = # agree/total = 765/1000 = 76.50%

Kappa = $(\Sigma fo - \Sigma fe)/(N - \Sigma fe)$ = (765-498.6)/(1000-498.6) = .53