

Introductory Statistics Tutorial Answers
Chapter 4 – Probabilities and Proportions

1. (a)

	Females	Males	Total
528.181	0.3003	0.2949	0.5952
528.188	0.1924	0.2123	0.4048
Total	0.4928	0.5072	1

(b) (i) $\frac{593}{2011} = 0.2949$ (ii) $\frac{991}{2011} = 0.4928$ (iii) $\frac{387}{2011} = 0.1924$

(c) $\frac{427}{814} = 0.5246$

(d) $\frac{427}{1020} = 0.4186$

2. (a)

	40 or under	Over 40	Total
Wearing a seat belt	0.484	0.369	0.853
Not wearing seat belt	0.066	0.081	0.147
Total	0.55	0.45	1

(b) 0.147

(c) $\frac{0.081}{0.147} = 0.551$

(d) 0.55

3. (a)

	Under 40	40 or over	Total
Mild cases	16	20	36
Serious cases	15	35	50
Total	31	55	86

(b) (i) $\frac{16}{86} = 0.1860$ (ii) $\frac{20 + 35 + 15}{86} = 0.8140$ (iii) $\frac{35}{86} = 0.4070$

(c) $\frac{15}{50} = 0.3$

(d) $\frac{20}{55} = 0.3636$

4. (a)

	High-risk	Low-risk	Total
In default	40% of 0.05 = 0.02	0.03	0.05
Not in default	0.2185	77% of 0.95 = 0.7315	0.95
Total	0.2385	0.7615	1

(b) 23.85%

(c) $\frac{0.02}{0.2385} = 0.0839$

5. (a)

	Female	Male	Total
Business degree	27% of 0.175 = 0.04725	0.12775	0.175
Other degree	0.42281	48.75% of 0.825 = 0.40219	0.825
Total	0.47006	0.52994	1

(b) 0.52994

(c) 0.12775

(d) $\frac{0.04725}{0.47006} = 0.1005$

6. (2)

