

S1 Numerical Answers

6683 Statistics S1 – January 2001

2. (a) 0.8517
3. (a) $P(Y=y) = \frac{1}{6}$, $y = 1, 2, 3, 4, 5, 6$
 (b) Discrete uniform distribution (c) 23 (d) $46\frac{2}{3}$
4. (a) 0.28 (b) 0.3 (d) 0.76 (e) 0.59
5. (c) 9.65 (d) 9 mins 58 secs (9.96), 2 mins 47 secs (2.78)
 (e) 0.329
6. (a) 3.18, 5.64, 10.48 (b) 0.977 (c) 1.77, 0.566
 (f) (i) £4814 (ii) £2655

6683 Statistics S1 – June 2001

1. (a) 43, 4
 (b) Mean unchanged – one value is 8 above μ and the other is 8 below.
2. (a) 1270600 (b) -0.976
 (b) As height above sea level increases, temperature decreases.
3. (a) 0.1056 (b) 11.2
4. (a) 0.2 (b) 0.6 (c) 0.3 (d) 4.9 (e) 8.04

5. (b) 0.61 (c) 0.21 (d) 0.47 (e) $\frac{21}{47}$
6. (a) 30, 42, 46
 (b) All have same *median* and same IQR. Alan - negative skew; Diane – positive skew; Gopal – symmetrical; any other sensible comment.
7. (b) $y = 19.4 - 0.968x$
 (c) $b \Rightarrow$ for every extra hour of practice 1 (-0.968) less error will be made, $a \Rightarrow$ without practice 19/20 errors will be made.
 (d)(i) Yes – all points reasonably close to the line.
 (ii) No – more likely to be

6683 Statistics S1 – January 2002

1. (a) (i) A text/investigation/process adopted for collecting data to provide evidence for or against a hypothesis.
 (ii) Sub-set of possible outcomes of an experiment.
 (b) Advantage – Quick, cheap, vary parameters; predict
 Disadvantage – Does not replicate real-world situation in every detail/accuracy.
2. $28\frac{1}{3}$ days
3. (a) $\frac{1}{2}$ (b) $\frac{17}{36}$ (c) $\frac{5}{6}$
4. (a) 0.4 (b) 0.4 (c) 0.2 (d) Events are independent
5. (b) $286 - \mu = 1.0364$ (c) 268, 17 (d) 251, 285

6. (a) 33, 24 (c) 41.2, 20.7 (e) Median male > Median female, IQR male > IQR female, Range male > Range female, Male position skew, Female almost symmetrical.
7. (b) 0.843 (d) $s = 44.3 + 1.14t$

6683 Statistics S1 – June 2002

1. (a) $\frac{5}{6}$ (b) $\frac{25}{216}$
2. Observe real-world problem; devise a statistical model and collect data; compare and observe against expected outcomes and test model; refine model if necessary.
3. (c) 0.01 (e) 0.042
4. (a)
- | x | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|----------|-----|-----|------|------|-----|-----|------|------|
| $P(X=x)$ | 0.1 | 0.1 | 0.05 | 0.15 | 0.1 | 0.1 | 0.15 | 0.25 |
- (b) 5.2 (c) 13.4; 23.04
5. (a) Bell shaped curve; symmetrical about mean; mean = mode = median; 95% of data lies within 2 standard deviations of mean; Asymptotic curve etc. Any two sensible comments.
(b) 4585.4583...; 466.6028... (c) 0.1056
6. (a) Frequency densities – 5, 0, 10, 4, 110, 75, 1.7 (b) 19.78/19.8; 0.96/0.963 (c) 20.1
(d) Median – data skewed.
7. (a) 0.797

- (b) r close to 1, value supports use of regression line
(c) $c = -13.6 + 2.92t$ (e) 33/34
(f) Temperature likely to be outside range of validity.

6683 Statistics S1 – November 2002

1. (b) (i) Normal (ii) Discrete uniform
2. (a) 0.108 (b) 0.449
3. (a) 0.075 (b) 0.475 (c) 0.25
4. (b) 0.8664 (c) 0.0178
5. (a) $t = 0.8796 + 1.1951s$ (b) $y = 13.709 + 1.195x$
(c) 0.943
6. (a) $\alpha = 0.3, \beta = 0.2$ (b) 0.6 (c) 2.36
(d) -2.6 (e) 9.44
7. (a) 78 (b) $Q_1 = 56, Q_2 = 70, Q_3 = 78$
(d) $\mu = 67.26, \sigma = 15.56$

6683 Statistics S1 – January 2003

2. (a) 0.1 (b) 0.75 (c) 0.6
3. (a) $\sigma = 3.90$ (b) 6.18% (c) $\mu = 55.88$
4. (a) $Q_2 = 16, Q_1 = 15; Q_3 = 16.5; IQR = 1.5$ (c) 16.1
 (d) Almost symmetrical/Slight negative skew.
 Mean (16.1) \approx Median (16) & $Q_3 - Q_2$ (0.5) \approx $Q_2 - Q_1$ (1.0)
5. (b) 1 (c) 13.5
 (e)
- | | | | | | | | |
|----------|------|------|--------|------|-------|-----|--------|
| y | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| $P(Y=y)$ | 0.25 | 0.25 | 0.0625 | 0.25 | 0.125 | (0) | 0.0625 |
- (f) 0.3125
6. (b) $y = -1.63 + 1.33x$
 (c) $2653.7 + 13.3p$
 (d) Number sold if no money spent on advertising
 $p = 0$ is well outside valid range – meaningless
7. $2 \times 13.3 \Rightarrow 27$ extra cars sold
 Only valid in range of data for 1990s

6683 Statistics S1 – June 2003

2. $t = 14.52$
3. (a) $S_{xy} = -157.9; S_{xx} = 155.9; S_{yy} = 215.0$
 (b) -0.862 (c) (i) -0.862
4. (b) $E(X) = 5.4; \text{Var}(X) = 0.52$ (c) 2.08
5. (a) Discrete uniform (b) $E(X) = 3.5; \text{Var}(X) = 2.917$
 (c) $\frac{1}{216}$ (d) (6,5,5); (5,6,5); (5,5,6); (6,6,4); (6,4,6); (4,6,6)
 (e) $\frac{1}{36}$
6. (a) 22.3 (c) $Q_2 = 20; Q_1 = 13; Q_3 = 31$
 (d) No outliers (f) $Q_3 - Q_1 > Q_2 - Q_1 \therefore$ positive skew
7. (a) m is explanatory variable (c) $p = 2.23 + 1.41m$
 (e) 23 or 24

6683 Statistics S1 – November 2003

1. (b) $S_{xy} = 6694$; $S_{xx} = 712.4$ (c) (i) $y = 5.95 + 9.40x$
(e) £33495
2. (a) 0.216 (b)

x	0	10	20	30
$P(X=x)$	0.4	0.24	0.144	0.216

(c) Mean = 11.8; s.d. = 11.7 (d) 0.358
3. (a) (i) 0.3085 (ii) 9.23 (b) $\mu = 523$
4. (c) $\frac{1}{12}$ (d) $\frac{1}{3}$ (e) $\frac{1}{2}$
5. (b) $\frac{2}{3}$ (c) $\frac{20}{3}$
6. (a) Mean = 805; s.d. = 621 (b) Median = 650; IQR = 665
(c) 2100 and 2315 are outliers

6683 Statistics S1 – January 2004

1. (a) $S_{mt} = 357$; $S_{mm} = 1750$ (b) $t = 6.83 + 0.204 m$ (c) 13.973
2. (b) 0.0796
3. (a) 0.166 (b) 0.916 (c) 0.917 (d) -1.17 (e) 0.743
4. (a)(i) $\frac{2}{5}$ (ii) 0 (iii) $\frac{9}{10}$ (iv) 0
5. (b) $Q_1 = 108.933$, $Q_2 = 228.5$ $Q_3 = 420.838$, IQR = 311.905
(c) $\mu = 308.2777$; $\sigma = 257.6238$ (d) Median & IQR
6. (b) $\frac{1}{12}$ (c) $\frac{5}{12}$ (d) $\frac{5}{12}$

6683 Statistics S1 – June 2004

1. $\frac{7}{12}$
2. (b) $S_{hc} = 1433\frac{1}{3}$; $S_{hh} = 1000\frac{2}{9}$; $S_{cc} = 2550$
(c) 0.897488 (d) Taller people tend to be more confident.
(e) $c = 317 + 1.43h$ (f) 574.4 (g) $161 \leq h \leq 193$
3. (a) $a = 0.4$; $b = 0.1$ (b) 0.3 (c) 0.4 (e) 5.64
4. (a) (i) 16.875; 1.16592 (ii) 93.75
(c)
- | | Mode | Median | IQR |
|--------|------|--------|-----|
| First | 18 | 47 | 2 |
| Second | 15 | 16 | 3 |
5. (a) 41.587 (b) 0.0594
(c) Normal distribution is not suitable
6. (b) 0.2 (c) 0.6 (d) $\frac{5}{8}$

6683 Statistics S1 – November 2004

1. (a) $a = 202, b = 202, c = 233$
2. (a) $y = 0.16 + 0.79x$ (b) $y = 35.71$
3. (b) (ii) 75 (c) 0.8301
4. (a) $\alpha = 0.2$ (b) 0.5 (c) 0.8 (d) $a = 2$ (e) 2.49
(f) 22.41
5. (b) $\frac{7}{12}$ (c) $\frac{3}{8}$
6. (a) $S_{xx} = 916; S_{yy} = 664; S_{xy} = 342$ (b) 0.439
(c) Slight evidence that students perform similarly in pressups and situps
(d) 10.7 (e) 21.0
7. (a) Time is a continuous variable (b) 39.5, 44.5

6683 Statistics S1 – January 2005

1. (b) 0.966
2. (a) $Q_1 = 33, Q_2 = 41, Q_3 = 52$
3. (b) Positive (c) 1793 (d) 1.028 (e) 13.3 (f) 35.7, 87.7
(g) All values between 35.7 and 87.7 so could be normal
4. (b) $\frac{2}{5}$ (c) $\frac{11}{3}$ (d) 7
5. (b) 0.918 (c) 0.978 (d) $\frac{19}{60}$ (e) $\frac{37}{27750}$
6. (a) Uniform (b) Tossing a fair dice/coin
7. (a) 0.2266 (b) 0.8166 (d) $b = 8.64$

6683 Statistics S1 – June 2005

1. Diagram A: -0.79 As x increases, y decreases
Diagram B: 0.08 No real pattern
Diagram C: 0.68 As s increases, t increases
2. (a) Distance is continuous (b) $0.8, 3.8, 5.3, 3.7, 0.75, 0.1$
(c) $Q_2 = 58.8; Q_1 = 52.48; Q_3 = 67.12$ (d) $\bar{x} = 62.5; s = 15.8$
(e) 0.1366 ; positive skew
3. (a) $y = -0.425 + 0.395x$ (b) $f = 0.735 + 0.395m$ (c) 93.6
4. (b) Distribution is positive skew
(c) Many delays are small so passengers should find these acceptable or sensible.
5. (a) $\frac{1}{17}$ (b) $3\frac{13}{17}$ (d) 13.3
6. (a) 0.0764 (b) 0.6393 (c) 153.2
7. (a) 0.338 (b) 0.46 (c) 0.743 (d) 0.218

6683 Statistics S1 – January 2006

1. (a) 56 (b) $Q_1 = 35; Q_2 = 52; Q_3 = 60$
(c) $\bar{x} = 49.4; \sigma^2 = 14.6$ (d) -0.448
2. (a) $p + q = 0.4; 2p + 4q = 1.3$ (b) $p = 0.15, q = 0.25$
(c) 1.75 (d) 7.00
3. (c) $a = 29.02; b = 3.90$ (e) (i) 103.12 (ii) 165.52
4. (b) $\frac{1}{4}$ (c) $\frac{2}{11}$
5. (b) (i) height, weight
(ii) score on a face after tossing a fair die
6. (b) $P(A) = 0.54; P(B) = 0.33$ (c) $\frac{32}{67}$
(d) Not Independent
7. (a) 0.0618 (b) 0.9545 (c) 0.00281
(d) Evidence suggests height and weight are positively correlated.
Assumption of independence is not sensible

6683 Statistics S1 – June 2006

1. (b) (i) 37 mins
2. (a) 0.037 (b) 19.27 (c) 24.8
3. (a) $S_{xy} = 71.4685$; $S_{xx} = 1760.45875$
 (b) $y = 0.324 + 0.0406x$
 (c) 2461.948 (d) $l = 2460.324 + 0.0406t$ (e) 2463.978
4. (a) 3 (b) 7 (c) 18
5. (b) 1.70; 0.095 (c) 0.3372
6. (b) $\frac{1}{10}$ (c) $\frac{41}{100}$ (d) $\frac{21}{100}$ (e) 0.667
7. (a) 0.338 (b) 0.46 (c) 0.743 (d) 0.218

6683 Statistics S1 – January 2007

1. (a) £17 (b) $S_{tt} = 983.8$, $S_{mm} = 1728.9$, $S_{tm} = 1191.8$
 (c) 0.914 (d) 0.914
2. (b) (i) 0.0105 (ii) 0.0455 (c) 0.44
3. (a)

x	1	2	3	4	5	6
$P(X=x)$	$\frac{1}{36}$	$\frac{3}{36}$	$\frac{5}{36}$	$\frac{7}{36}$	$\frac{9}{36}$	$\frac{11}{36}$
- (b) 0.583 (c) 4.47 (d) 21.97 (e) 17.7
4. (a) Positive skew (b) 26.7 (c) 29.6, 16.6 (d) 0.520
5. (d) 30
7. (a) 0.274 (b) $k =$

6683 Statistics S1 – June 2007

1. (a) $-0.81579\dots$ (c) -0.816
2. (a) $\frac{1}{2}$ (b) 54 (e) $\sigma = 13.43\dots$
3. (c) 17.0 (d) $l = 2460.324 + 0.0406t$ (e) 2463.978
4. (c) 25%
5. (a) 35, 15 (b) 40 (c) 18.91 (d) 7.26
(e) Median = 18.1, Lower Quartile = 15.25,
Upper Quartile = 23.15
(f) 0.376..., positive skew
6. (a) 0.1056 (b) $d = 27.2$
7. (a) $p + q = 0.45$, $3p + 7q = 1.95$ (b) $p = 0.15$, $q = 0.30$
(c) 0.35 (d) 7.15 (e) 1 (f) 114.4

6683 Statistics S1 – January 2008

1. (a) 0.155
2. (a) 230, 87.3 (b) 189; 170, 254 (c) F and B
(d) 0.3, positive skew
3. 12
4. $S_{xx} = 153.9$, $S_{xy} = 19.9$ (b) $y = 8.89 + 7.73x$
(d) 48000
5. (b) 0.01 (c) 0.04 (d) 0.03 (e) 0.06
(f) $\frac{31}{32}$ or 0.969
6. (a) 200 g (b) 11.9 (c) 0.046
7. (a) $\frac{1}{16}$ (b) 0, 3, 6, 9; 0, (2), 4, 6; (0), 1, 2, 3; 0, 0, 0, 0
(c) $a = \frac{7}{16}$, $b = \frac{1}{16}$, $c = \frac{1}{16}$, $d = \frac{1}{16}$ (d) $2^{\frac{1}{4}}$ (e) $7^{\frac{3}{16}}$

6683 Statistics S1 – June 2008

1. (b) 0.0484 (c) 0.607438
2. (a) 50 (b) $Q_1 = 45$ $Q_2 = 50.5$ $Q_3 = 63$
(c) 52.46 (d) 0.20
3. (c) $q = 0.1$, $p = 0.4$ (b) 2.25 (c) = -2.9
4. (a) $S_{tt} = 186.6973$ $S_{vv} = 0.40184$ $S_{tv} = 6.9974$
(b) 0.808 (e) 0.0375, 0.669 (f) 1.4
5. (b) $\frac{47}{60}$ (c) $\frac{10}{143}$ (d) $\frac{1}{15}$
6. (a) 1
(b)

x	2	3	4
$P(X=x)$	$\frac{9}{25}$	$\frac{7}{25}$	$\frac{9}{25}$
7. (a) 0.0668 (b) 45.35
(c) 0.012

6683 Statistics S1 – January 2009

1. (a) $S_{xx} = 11.424$ $S_{xy} = 108.26$
(b) $y = -10.7 + 9.48x$ (d) 20.6
2. (a) 0.24 or $\frac{6}{25}$ or $\frac{18}{75}$ (b) $\frac{13}{75}$ or 0.173
3. (a) 1 (b) 0.7 (c) 2 (d) 9 (e) 0.15
4. (a) $Q_1 = 35$ $Q_2 = 53$ $Q_3 = 60$ (e) -0.0057
5. (a) width = 5 cm height = 0.75 cm
(b) $Q_2 = 10.2$ IQR = 9 (c) 12.8 (d) 9.88
6. (a) 0.9641 (b) $d = 24$ (c) $e = 36$ (d) 0.7698

6683 Statistics S1 – June 2009

1. (a) $S_{pp} = 18322.5$ and $S_{pt} = 16150$ (b) 0.8088...
2. (b) (i) $\frac{1}{30}$ (ii) $\frac{4}{5}$ (c) $\frac{5}{6}$
3. (a) 1 cm (b) 6 cm
4. (a) 17.1 (b) mean = 17.129; standard deviation = 3.294
(c) -0.00802
5. (a) $w = -60.45 + 1.80l$
(b) In range 47.3 – 47.6 inclusive
6. (a) a (b) $a = 0.1, b = 0.4$ (c) 0.3 (d) 2.8
7. (a) (i) $a + b$ (ii) $a + b - ab$ (b) 0.5 (c) 0.035
(d) 0.185
8. (a) 0.345 (b) 172.3 (c) 49.9

6683 Statistics S1 – January 2010

1. (b) $\frac{1}{6}$
2. (a) 33 (b) 16
3. (a) 2.75, 5.5 (b) 3.2273 (c) 0.421 (d) 3.2457
(e) negative skew
4. (b) $\frac{4}{45}$ (c) $\frac{17}{180}$ (d) $\frac{1}{10}$
5. (b) $\frac{13}{14}$ (c) $\frac{18}{7}$ (d) $\frac{19}{49}$
6. (a) 7270, 2369, 1569.43... (b) 0.701
(e) $p = 45.5 + 1.51t$ (g) $p = 105.84$
7. (c) $\sigma = 8.30, \mu = 168$ (d) 0.8212

6683 Statistics S1 – June 2010

1. (a) 0.763 (c) 0.763
2. (a) $\frac{5}{12}, \frac{7}{12}; \frac{2}{3}, \frac{2}{3}, \frac{1}{2}, \frac{1}{2}$ (b) $\frac{41}{72}$ (c) $\frac{20}{41}$ (d) $\frac{37}{72}$
3. (a) 0.25 (b) 1 (c) 2.1 (d) 8.4 (e) $\frac{9}{20}$
4. (b) $\frac{7}{15}$ (c) 0 (d) $\frac{9}{20}$ (e) independent
5. (a) 23, 35.5 (b) 2 cm, 10.4 cm (c) 23.5 (d) 23.7
(e) negative skew
6. (c) 24.2, 49.1 (d) $f = 15.0 + 2.03d$ (e) $t > 505$
7. (a) 0.8944 (b) 35.4 (c) 24.6
(d) $h = 8.5, k = 51.5$ (e) 0.007
8. (a) 0.0902 (b) 0.184 (d) £216

6683 Statistics S1 – January 2011

1. (a) $S_{ll} = 3419.92, S_{iw} = 569.666$ (b) $r = 0.572$
(c) As the length increases, the weight increases
2. (a) 3.8 mm (b) No effect
3. (b) Negative skew (c) Not true
4. (a) $p = 1.92 + 0.293v$ (c) 4.3
5. (a) 41.3 (b) 44.1875, 14.7 (c) Positive skew
6. (b) 3 (c) 10 (d) 25 (f) 0.2, 0.16
(g) 0.05
7. (a) $\frac{2}{3}, \frac{1}{3}; \frac{4}{9}; \frac{3}{5}, \frac{2}{5}; \frac{4}{9}, \frac{4}{9}, \frac{5}{9}$ (b) $\frac{2}{5}$ (e) $\frac{11}{15}$ (f) $\frac{6}{11}$
8. (a) 0.0548 (b) $w = 148.37$ (c) $\mu = 155, \sigma = 2.22$

6683 Statistics S1 – June 2011

1. (a) 209.9 (b) -0.871 (d) 3.54 (e) -0.871
2. (a) 16 (b) 0.4192
3. (a) $a = 0.1, b = 0.4, c = 0.2, d = 0.8$ (b) 0.9
4. (a) 0.2420 (b) 15.28
5. (a) 10.5 (b) 15.875 or 16.0625 (c) 5.88
(e) positive skew
6. (a) 0.3 (b) 0.2 (c) 0.6 (d) not independent
7. (a) 64.75 (b) 1.6392 (c) 138 – 139
8. (a) 0.1 (b) 2.55 (d) 2.9475 (e) 0.04
(f) 0.038 (g) 0.064

6683 Statistics S1 – January 2012

1. (a) 14, 5 (b) 69
2. (a) R and S are mutually exclusive
(b) $\frac{5}{9}$ (c) $\frac{5}{12}$ (d) $\frac{4}{9}$
3. (b) $\frac{11}{21}$ (c) $\frac{74}{21}$ (d) 14 (e) $\frac{698}{9}$
4. (a) 60 (b) 46, 54, 64 (c) 55.5, 10.3 (e) 45, 9
5. (a) 191.6, -5.03 (b) $-0.908, -0.026$
(c) $w = 11.6 - 0.0263t$
(e) (i) 11.5 g (ii) decrease 0.1 g
(f) decrease
6. (b) 0.07 (c) 0.08 (d) 0.55 (e) $\frac{3}{13}$
7. (a) 0.0548 (b) 235

6683 Statistics S1 – June 2012

1. (b) $-\frac{1}{3}$ (d) 11
2. (a) 0.818 (b) 0.818
3. (c) 167, 526 (d) $t = 0.741 + 0.318p$ (f) 5.825
4. (a) B and W or T and W (b) not independent
(c) $\frac{7}{25}$ (d) $\frac{1}{5}$ (e) $\frac{5}{9}$
5. (a) 90 (b) 28.8 mph (c) 28.1 mph (d) positive skew
6. (a) 0.945 (b) 164 cm (c) 174 cm
(d) not independent
7. (b) 0.0284 (b) 0.903 (c) 0.0745

6683 Statistics S1 – January 2013

1. (a) $S_{tt} = 2045.6$, $S_{gt} = -90.68$ (b) $r = -0.715$
(c) Positive
2. (b) $P(X=1) = \frac{14}{40}$, $P(X=2) = \frac{7}{40}$, $P(X=3) = \frac{19}{40}$
(c) $\text{Var}(4X-5) = \frac{259}{20}$
3. (b) $m = 8.47 - 0.256t$ (c) 5.9 s (d) Should be reliable
4. (a) $P(L > 127) = 0.0359$ (b) $d = 80.776$ (c) 0.39
5. (a) $w = 4$ cm, $h = 2.25$ cm (b) £276
(c) $\bar{y} = 316$, $\sigma_y = 157$ (d) positive skew
(e) $P(240 < X < 400) = 0.40 \sim 0.41$
(f) Reasonable fit but not good fit overall
6. (b) Discrete Uniform (c) $E(B) = 3$ (d) $E(R) = 3$
(e) $\text{Var}(R) = \frac{7}{3}$ (f) $P(\text{Avisha wins}) = \frac{5}{12}$
7. (a) $P(A \cup B) = 0.67$ (b) $P(A' | B') = 0.6$
(c) $P(B \cap C) = 0.09$ (e) $P(B \cup C)' = 0.44$

6683 Statistics S1 – June 2013 (R)

1. (a) $y = 5.52 + 0.0588x$ (b) $e = 46 + 0.15g$ (c) 61
2. (a) $P(X = 1) = 0.4, P(X = 2) = 0.25, P(X = 3) = 0.35$
(b) $F(1.8) = 0.4$
3. (a) width = 3cm, height = 2 cm (b) 8.96
(c) $\bar{x} = 10.8, \sigma_x = 7.46$ (d) positive skew
(e) 12 plants
4. (a) 0.309 (b) $d = 14.5$ (c) 0.538
5. (a) $S_{yy} = 20.9, S_{xy} = 16$ (b) 0.661 (d) new $x = 6$
(e) r will decrease
6. (a) $p = 0.15$ (b) $q = 0.24, r = 0.21$ (c) 0.75
7. (a) 2.6 (c) 3.64 (d)(i) 10 (d)(ii) 91
(e) 0.6 (g) 0.57

6683 Statistics S1 – June 2013

1. (a) $S_{th} = -22\,400, S_{hh} = 1\,490\,000$ (b) -0.952
(d) $t = 24.2 - 0.015h$ (f) 7.5°C
2. (a) 25 (b) $Q_2 = 51, \text{IQR} = 17$
3. (a) 0.55 (b) 0.99 (c) 0.375 (e) 0.25
4. (a) mean = 24.2, $\sigma = 9.29$ (b) $Q_2 = 22.7$ (d) $\text{IQR} = 6.9$
5. (a) $a = 0.1, b = 0.2$ (c) 24.84 (d) $k = 0.2$ (f) 0.01
6. (a) $\mu = 210$ (b) 2.7% (c) $\sigma = 2.15$

6683 Statistics S1 – June 2014 (R)

1. (a) $p = 0.2$ (b) -0.5 (c) 0.6
 (d) 0.35 (d) $a = \pm 2$
2. (a) Uniform
 (b) (i) $\frac{1}{10}$ (ii) $\frac{9}{10}$
 (c) (i) 0 (ii) $\frac{1}{2}$
3. (a) 158 (b) 0.750 (c) 28.3
 (d) $\text{£}3700$ (e) Goes up $\text{£}82.40$
 (f) (i) $r = 0.750$ (ii) $b = 0.412$
4. (a) $\frac{1}{5}$ (c) 0.35 (d) $\frac{4}{7}$ (e) 0.3
5. (a) 4.5 (c) 17
7. (a) $\frac{117}{500}, \frac{273}{500}, \frac{187}{1000}, \frac{33}{1000}$
 (b) 0.733 (c) 0.556 (d) 0.488

6683 Statistics S1 – June 2014

1. (a) $a = 44, b = 76$
2. mean = 57.7 , standard deviation = 4.71
3. (a) 0.962 (c) 0.740 (d) $-467 + 0.74v$ (f) 1380
4. (b) 0.245 (c) 0.0335 (d) 0.597
5. (b) $\frac{1}{3}$ (c) $5\frac{7}{9}$ (d) $37\frac{1}{3}$ (e) 63.2
6. (a) Width: 0.5cm , Height: 7.5cm
 (b) Median = 75.4
 (c) (i) Mean = 76 (ii) Standard deviation = 21.3
 (d) Coefficient of skewness = 0.08
7. (a) 0.106 (b) 0.0587 (c) 173
8. (a) 0.6 (b) 0.82 (c) 0.33 (d) Independent

6683 Statistics S1 – June 2015

1. (a) 39 (b) 13 (c) 68.5
2. (a) $a = 1800, b = 10$ (b) -0.749 (c) -0.749
3. (b) 0.1625 (c) 0.5875 (d) 0.809
4. (b) -22.2 (c) $y = 28.1 - 2.14x$ (e) 23.8
5. (b) 0.288 (c) 0.311 (d) 12
(e) 162 (f) 30
6. (a) (i) 0.1357 (ii) 0.9713 (iii) 0.8664 (iv) 0.9332
(b) 29.2