Answers for DDD Winter Final2013

1) E(x)=98.6, V(x)=12.96, s=3.6

2a) 0.0625 b) 0.445 c) 0.4375 d) 0.04

3) 0.12

4a) 0.384 b) 0.2

5) a) 0.721 b)20.6299km/h c) $f(x)=F'(x)=\begin{cases}\frac{3(x-100)^2}{100^3} & if \quad 0\le x\le 100\\ 0 & otherwise\end{cases}$

6a) p(1)=0.0769, p(2)=0.3297, p(3)=0.4396, p(4)=0.1538

b)

c) E(X)=2.6703 E(X^2)=7.8129 V(X)=0.6824

7a)P($R\ge 32$)=0.0099 P($R\ge 27$)=0.2514 b) 30.64 c) 0.9512

8a) 0.1596 b)0.1867

9a) 0.0956 b) 0.0521

10a) $H_o:\mu=40$

$H_a:\mu$ f 40

$Z^*=3.75$

$Z_\alpha=1.645$ Reject H_o

b) 0.65355

c) (40.2864,40.9136)

d) $n\ge 111$

11. 44.8521

12) 0.02

13 a) $H_o:\sigma^2_f=\sigma^2_m$

$H_a:\sigma^2_f\neq\sigma^2_m$

$F^*=2.5774$

2(0.05) p p-value p 2(0.1) Do not reject H_o

b)

14) a) (-.0.0266,0.0794) b)Yes, since 0 is contained in interval.

15) H_o :Birth order and discipline of study are independent variables

H_a :Birth order and discipline of study are not independent variables

$\chi^{2*}=7.7334$

Reject H_o

16a) r=0.8829 stronger correlation r=0.7681

b) $y=-85.7807+2.8555x$