Example 1

Finding Mean

X = 0 P(x) = 0.35

= 0

X =1 P(x) = 0.25

= 0.25

X = 2 P(x) = 0.20

= 0.40

X= 3 P(x) = 0.15

= 0.45

X = 4 P(x) = 0.05

= 0.20

Mean of X = 0 + 0.25 + 0.4 +0.45 + 0.2 = 1.3

Finding Variance

X=0 P(x) = 0.35 Mean = 1.3

Variance = (0 – 1.3)\*\*2 (0.35) = 0

X=1 P(x) = 0.25 Mean = 1.3

Variance = (1– 1.3)\*\*2 (0.25) =

X=2 P(x) = 0.2 Mean = 1.3

Variance = (2– 1.3)\*\*2 (0.20) =

X=3 P(x) = 0.15 Mean = 1.3

Variance = (3– 1.3)\*\*2 (0.15) =

X=4 P(x) = 0.05 Mean = 1.3

Variance = (4– 1.3)\*\*2 (0.05) =

All together = 1.51

Standard Deviation = square root of variance = 1.23

Example2

n=12

P = 0.1

X be number of invoices that receive discount

p(x<4) = p(x-1) + p(x-2) + p(x-3)

p(x-1) = (n! / x! (n-x)! ) p of x (1-p) \*\*(n-x)

= (12! / 1! (11)! ) (0.1) (0.9) \*\*(11)

= (0.376)

P(x-2) = (12! / 2! (10)! ) 0.1 (0.9) \*\*(10)

= (0.23)

P(x-3) = (12! / 3! (9)! ) (0.1) (0.9) \*\*(9)

= (0.085)

P(x<4) = 0.37 + 0.23 + 0.085 = 0.685

The Z-score

Example 3

Z = x – u /Q

= 10.8-10 / 1.3 = 0.6154