

() () () -

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(zero defect)

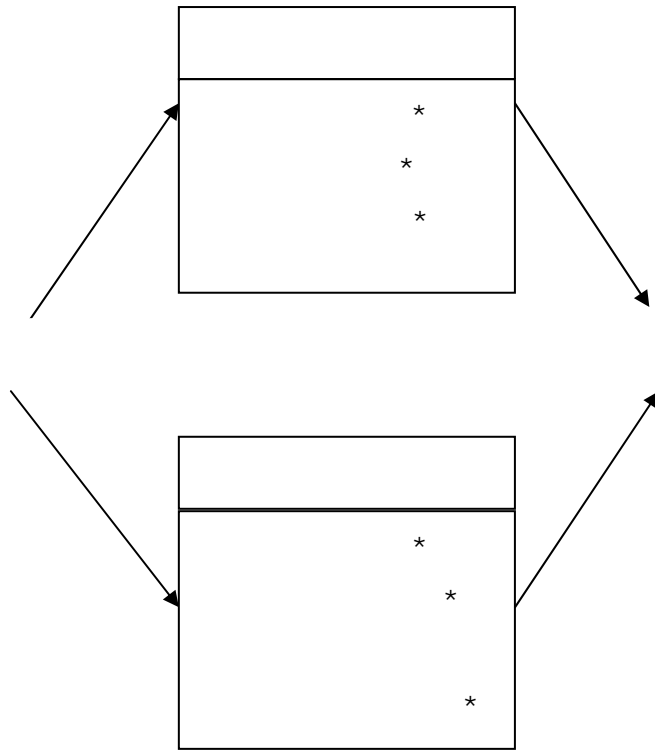
.
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:
) () () ..
(quality) (:
(such us the thing really is) (qualis)
(goetsch&davis,1997:3) (:)
-:
()CEO & fred smith -
()GSA-
()Boeing-
()US department-
(.

(heizer&render,1996:79) (Schroeder,2004:132)
a)
(user- based approach to quality
a- product-based approach to quality) (attributes)
(
(manufacturing –based approach to quality)

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(:)
) (1994:9 kotler&Armstrong,)
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() () () -
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 heizr&render,1996

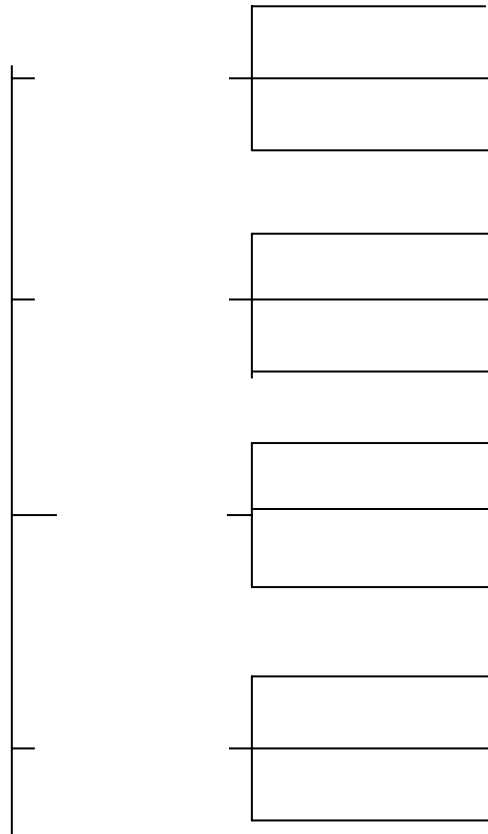


Source :heizer &render,1996:79
 company's reputation -

product libility -

The International application -

- : : (- :). Heizer & Render



Source:schroeder,2004:136

Total quality management -:

(Goetch&Davis 1997:4) (:)
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. (Heizer&Render,1996:81)
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(T.Q.M)

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quality control

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statistical control quality

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(levin&rubin,1998:514)

.(Schroeder,2004:158)

(heizer&render,1996:110)

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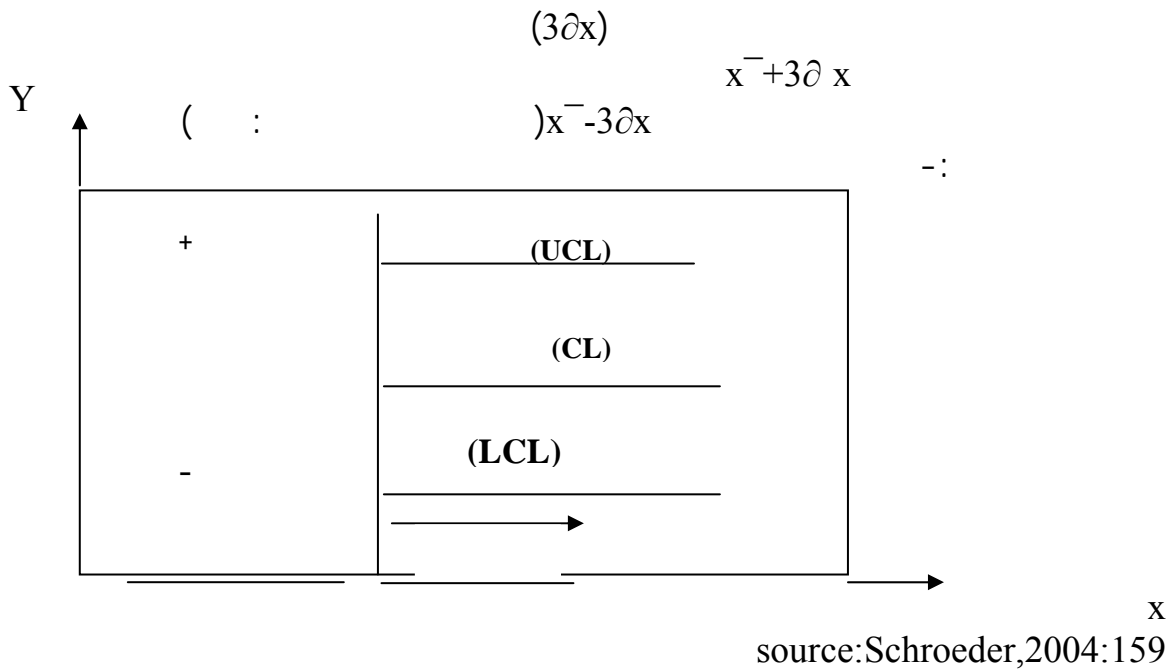
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-(control charts for variables)

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.(control charts for attributes)

(: () (:) (:)



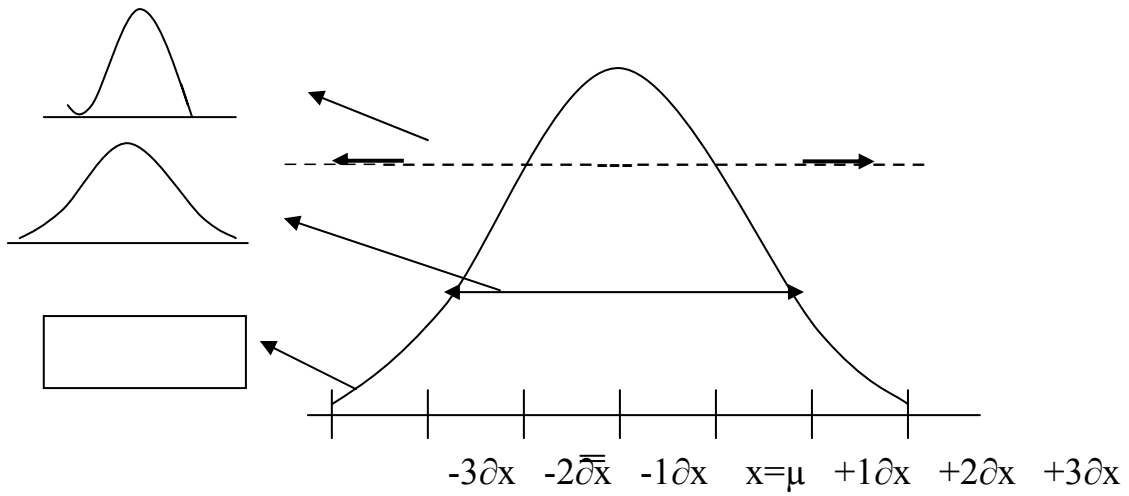
-:

$3σx̄ ±$ % -
 $2σx̄$ % -

(μ)

(σx)

() () () -



Source:-heizer&render,1996:114

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(Schroeder,2004:154)

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(Bell)

(Walter Shewart)

(shewhart)

(Levin&rubin,1998:514) (statistical process control)(spc)

(shewart)

(Roming&Dodge)

. (Schroeder,2004:154)

(

) (shewart)

. (goetsch&davis,1997:506)

(A.S.Q)

(A.S.Q)

.(Schroeder,2004:154-155)

(deming)

(Levin&rubin,1998:514)

.(heizer&render,1998:110)

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: (X-chart,R-chart)

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. (N)
(n)

(
(

. (x1,x2,x3...xn) (x)

(

(R) (range)

(

R=x(largest value) – x (smallest value) .

:

(

$$X^- = (x_1 + x_2 + x_3 \dots x_n) / n$$

(

$$= \frac{X^- = (x_1 + x_2 + x_3 \dots x_n) / N}{N}$$

(

$$R = R_1 + R_2 + R_3 \dots + R_n / N$$

-:

(

$$U.C.Lx = X + A_2R$$

$$C.Lx = X$$

$$L.C.Lx = X - A_2R$$

-:

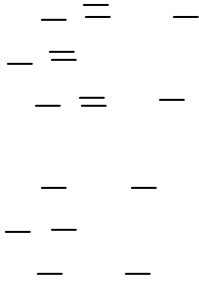
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$$U.C.LR = D_4R$$

$$C.LR = R$$

$$L.C.LR = D_3R$$

A2,D3,D4



(x)

(

(x) (Y) (1.....N)

(x ,R)

(R)

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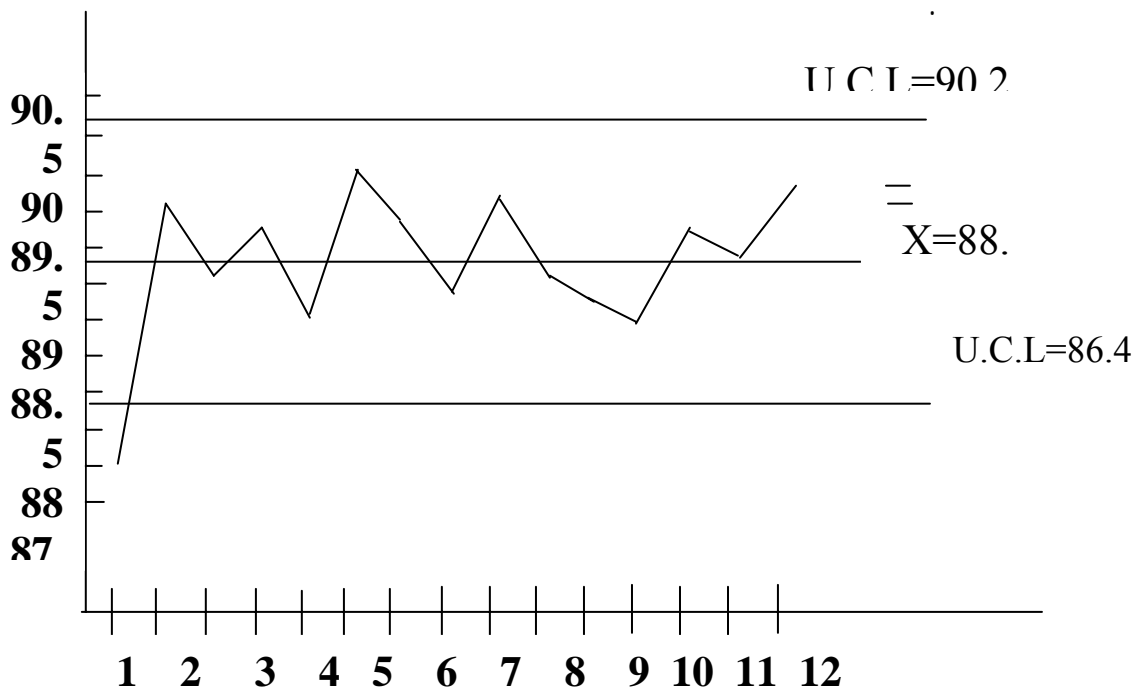
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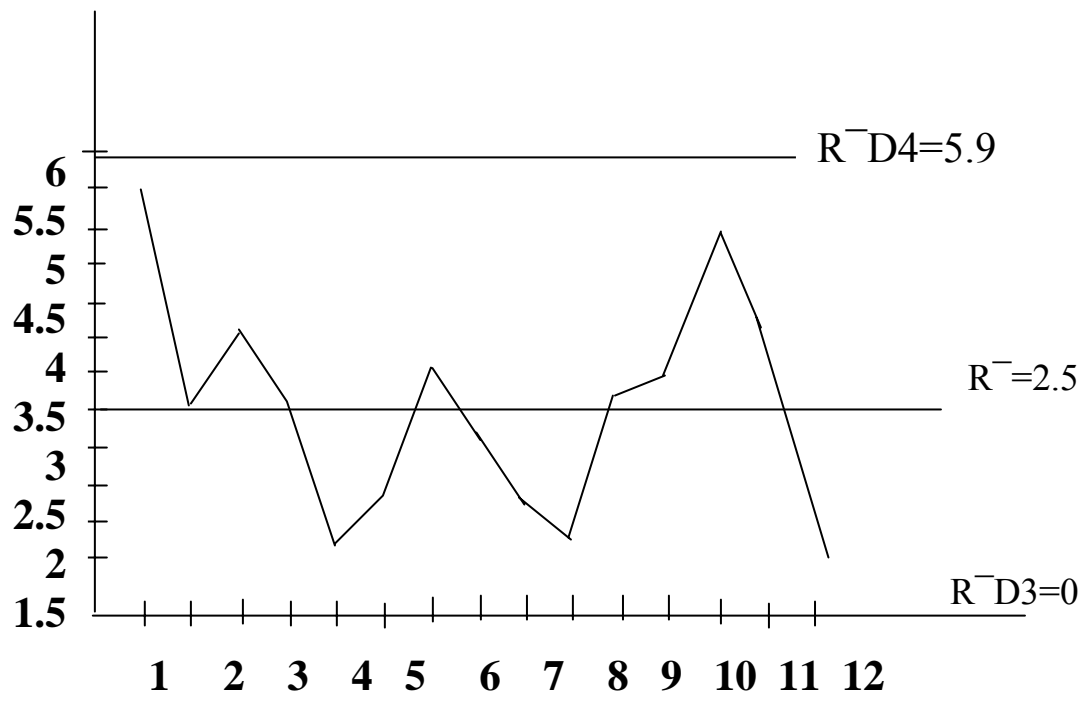
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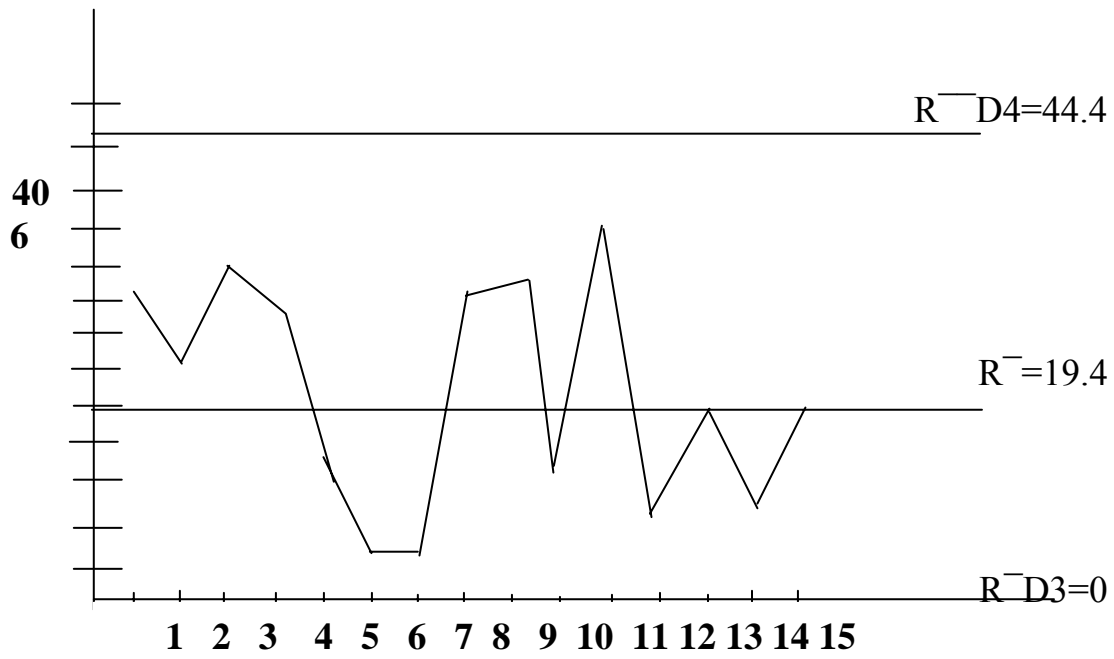
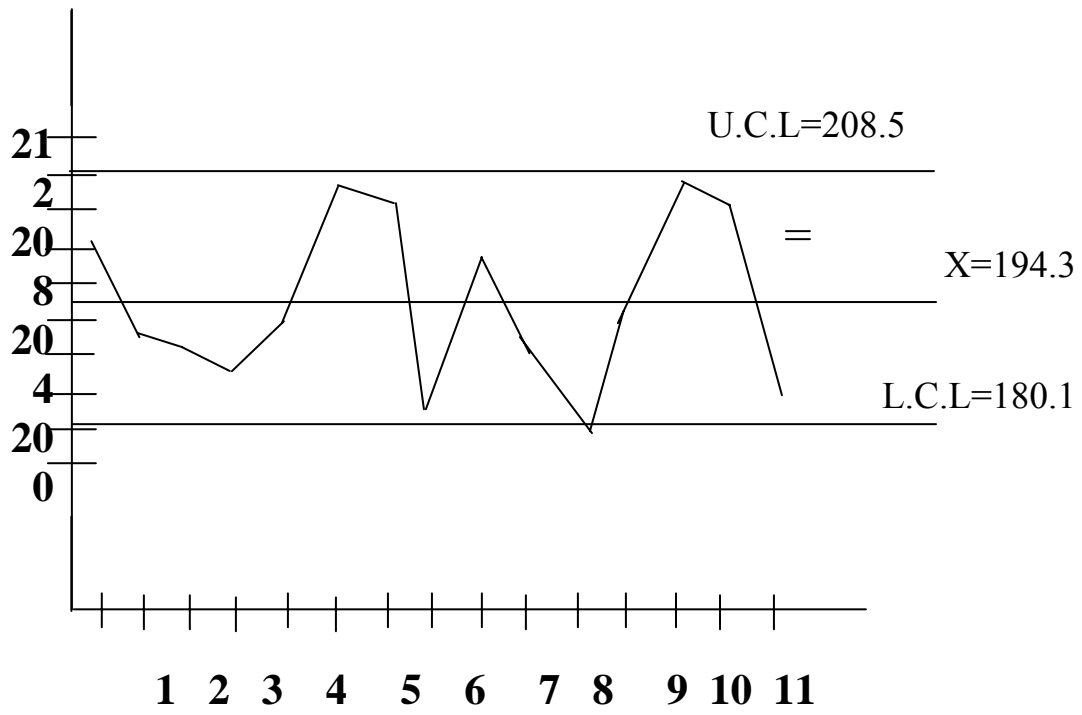


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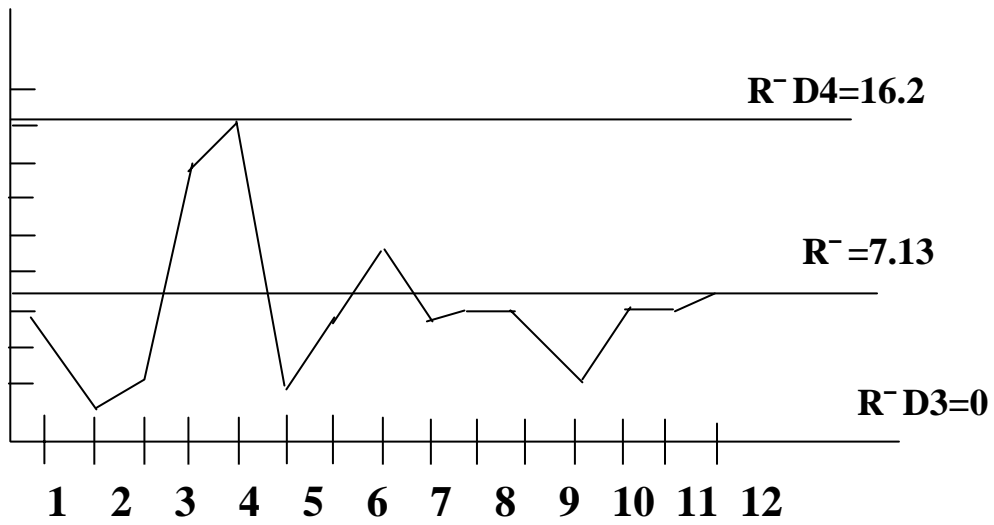
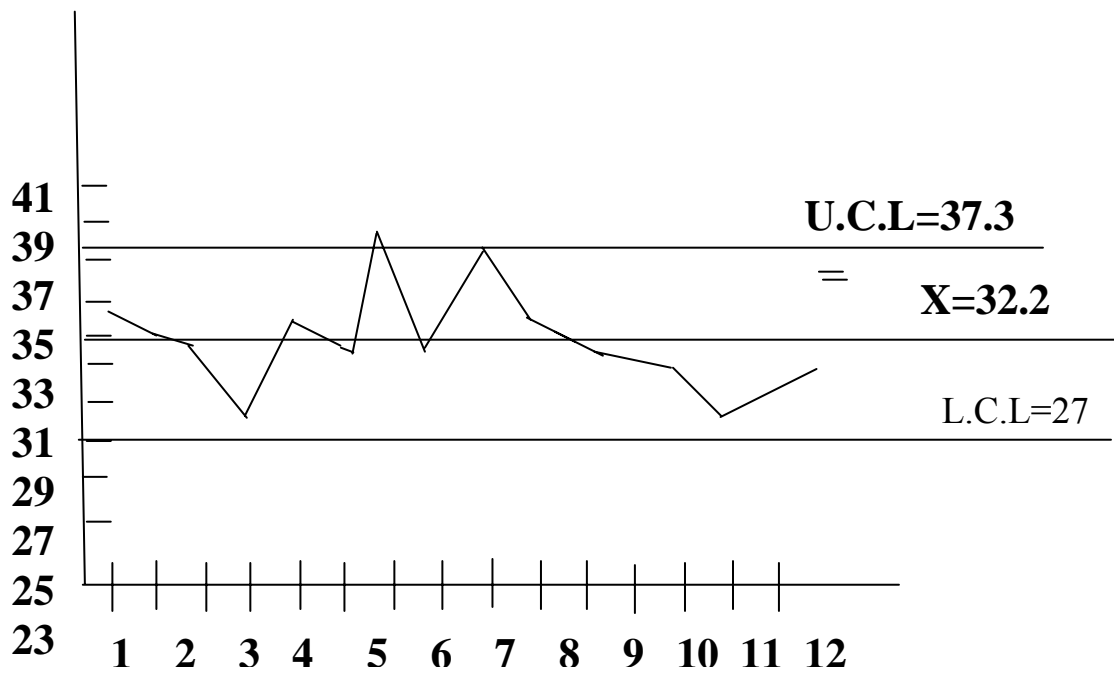


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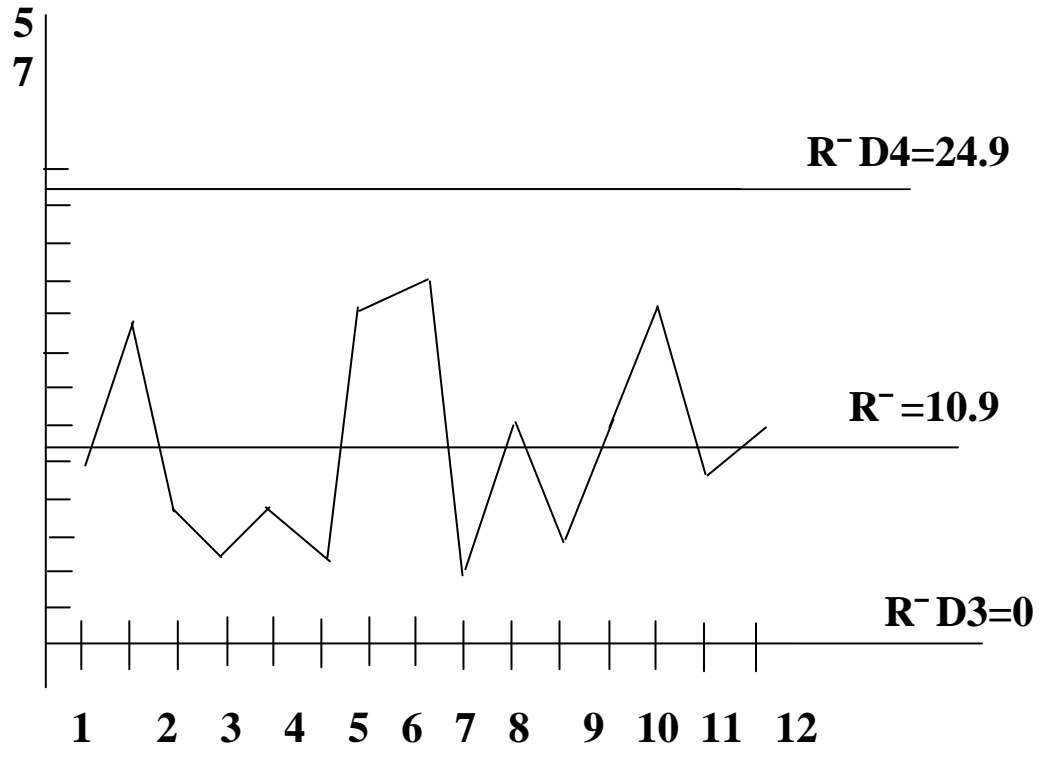
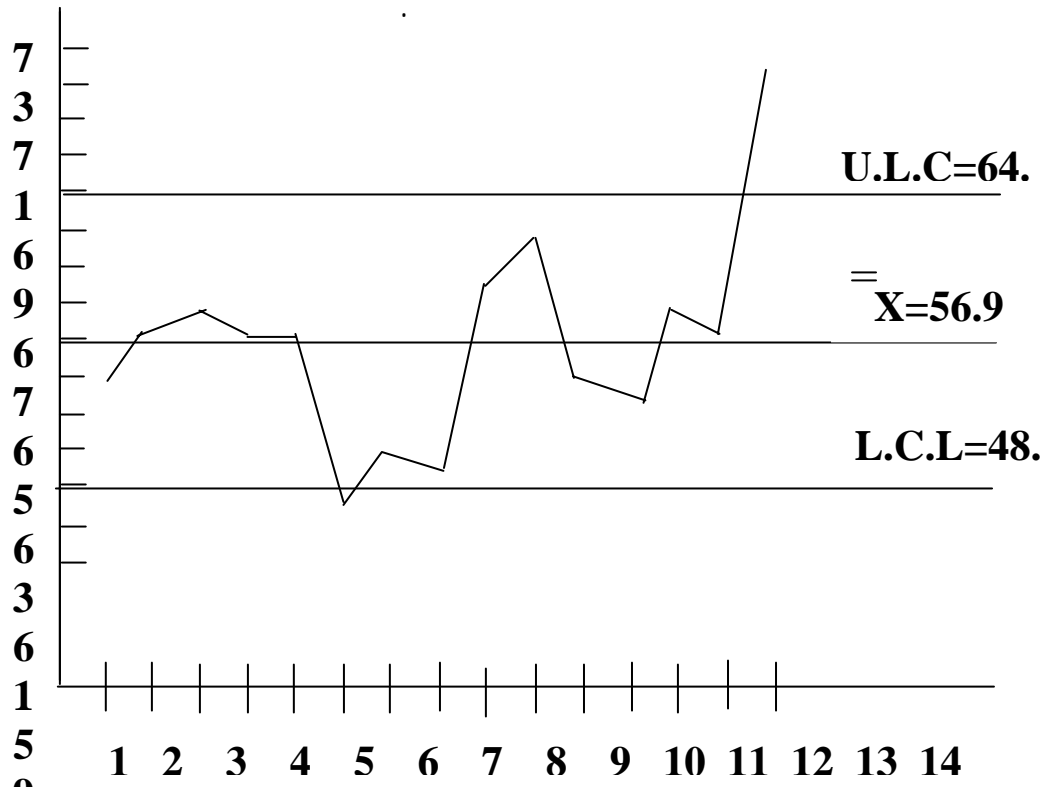
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.R.F

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1-Goetsch , Davis L& Davis , stanly.R(Itroudion to total quality:quality management for production processing and services) , 2nd ed, pretice hall Inc , New Jersy , U.S.A ,1997.
 2- Schroeder , roger .G(operation management)2nd ed , Mcgraw Inc N.J ,U.S.A ,2004.
 3- Heizer, Jay & render , Barry (production and operation management : strategic and tactical decision) , 4thed prentice hall ,N.J, U.S.A 1,1996.
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 5- Levin , Richard & Rubin , Davis (statistics for management) , 7thed , upper saddle river , N.J , U.S.A , 1998.