~~Intensity transformation~~

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1) Consider the two dimensional Process given below as a gray scale digital image integer values Mentioned are the Pixel intensity values at the Corresponding Pixels

a) Perform a log transformation ($c=1$) transformation On image shows in the previous question and obtain the output

b) Perform a power law transformation ($c=2$) obtain the output image.

1	2	1	5	23	5
4	3	7	8	9	0
3	5	9	7	10	12

Sol

$r=1$
$r\log(1+1) = 1$

$r=2$
$r\log(3) = 1.585$

$r=1$
$1\log(2) = 1$

$r=15$
$\log(16) = 4$

$r=2$
$\log(3) = 1.585$

$r=5$
$1\log(6) = 2.585$

$r=4$
$1\log(5) = 2.32$

$r=3$
$\log(4) = 2$

$r=7$
$\log(2) = 3$

Sol

$r = 8$

$r \log(9+8) = 3.17$

$r = 9$

$i \log(3) = 1.585 \quad 3.322$

$r = 0,$

$\log(1) = 0$

$r = 3.$

$\log(4) = 2$

$r = 5$

$\log(6) = 2.585$

$r = 9$ $\log(10) = 3.322.$

$r = 17$

$\log(8) = 3.17$

$r = 10$ $\log(11) = 3.4594$

$r = 12$

$\log(13) = 3.7004.$

$r = 15$ $\log(13) = 3.7004.$

$r = 15$ $\log(16) = 4.$

$r = 12$ $\log(13) = 3.70$

$r = 9$ $\log(10) = 3.22$

$r = 8$ $\log(9) = 3.17$

$r = 4$ $\log(5) \quad 3.22.$

$r = 13$

$\log(14) = 3.807$

$r = 14$

$\log(4) = 2.$

$r = 12$

$\log(3) = 1.585$

$r = 0$

$\log(1) = 0$

$r = 14.$

$\log(15) = 3.907$

$r = 0$

$\log(1) = 0$

(b)

$\Rightarrow$ $S \Rightarrow cr^r \;((c=2, \; y = 0.0005)$

$\Rightarrow \quad (2)(1)$

$\Rightarrow 2$

2	2.06	2	2.39	2.06	2.8
2.14	2.11	2.23	2.26	2.28	0
2.11	2.18	2.28	2.23	2.30	2.34
2.39	2.34	2.28	2.26	2.14	2.36
2.11	2.06	2	0	2.37	0