


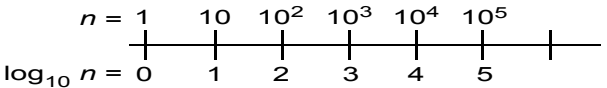

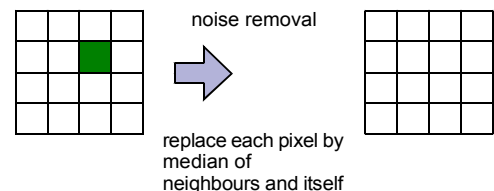


1 - Imaging - Bits and Bytes	
<ul style="list-style-type: none"> • A bit is the smallest unit of digital information, represented as a 0 or a 1 corresponding to low voltage or high voltage in a digital circuit. • A byte is a sequence of eight bits coded to represent one of 256 (=2⁸) alternatives. • A file of I bits represents one of $N = 2^I$ different values. • The quantity $I = \log_2 N$ is the measure of amount of information in bits. 	<p>Keywords Bits Bytes Digital Information</p> <p>1.13</p>

1 - Imaging - Logarithms	
<ul style="list-style-type: none"> • Base 10 logarithms are written lg, log₁₀ or just 'log' • $2 = \log_{10} 100$ as $100 = 10^2$ • $-3 = \log_{10} 0.001$ as $0.001 = 10^{-3}$ • Logs make multiplying into adding and dividing into subtracting. • Product rule: if $z = x y$, then $\log z = \log x + \log y$. • Quotient rule: if $z = x / y$, then $\log z = \log x - \log y$. 	<p>Keywords Logarithms Logarithmic scales Logs</p> <p>1.15</p>

1 - Imaging - Log scales	
<ul style="list-style-type: none"> • Logarithms are related to 'times' scales, where a quantity is multiplied by a constant at each step. • Logarithmic scales show equal multiples as equal intervals. • They are useful when data cover a wide range of values. <p style="text-align: center;">Base 10 logarithms</p> <div style="text-align: center;">  </div>	<p>Keywords Logarithms Logarithmic scales Logs</p> <p>1.14</p>

1 - Imaging - Noise reduction	
<ul style="list-style-type: none"> • <i>Noise reduction</i>: noise in an image can be reduced by replacing the value of a pixel with the median of the values of that pixel and its 8 neighbours. <div style="text-align: center;"> <p>Noise reduction</p>  </div>	<p>Keywords Image processing Noise Median Pixel</p> <p>1.16</p>