

**Gaussian noise with amplitude = 10**

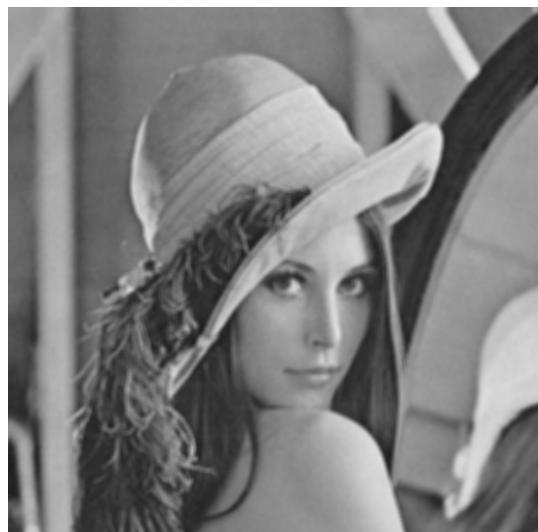


**SNR = 13.60531290601995**



**Box\_3x3**

**SNR = 18.66904758467269**



**Box\_5x5**

**SNR = 15.00221810589556**



**Median\_3x3**

**SNR = 19.405682734540008**



**Median\_5x5**

**SNR = 16.41472907150992**



**Closing-then-opening**

**SNR = 3.858335926464531**



**Opening-then-closing**

**SNR = 3.919377560720137**

**Gaussian noise with amplitude = 30**



**SNR = 4.058240705450452**



**Box\_3x3**

**SNR = 15.766198164818277**



**Box\_5x5**

**SNR = 14.397157685065425**



**Median\_3x3**

**SNR = 14.743085079552877**



**Median\_5x5**

**SNR = 14.648367531595596**



**Closing-then-opening**

**SNR = 3.7693954199619526**



**Opening-then-closing,**

**SNR = 4.094555537529426**

**salt-and-pepper noise with threshold = 0.05**



**SNR = 0.9084909400503092**



**Box\_3x3**

**SNR = 9.462396807943907**

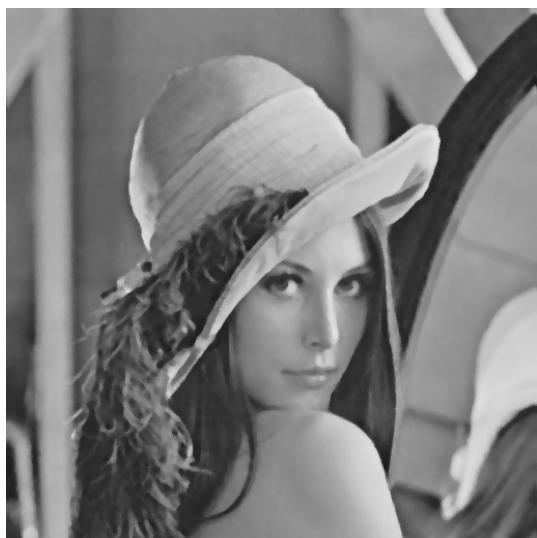


**Box\_5x5**

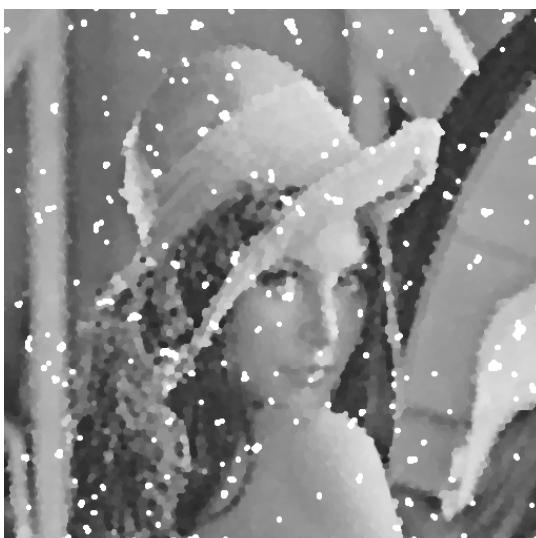
**SNR = 11.151049530346322**



**Median\_3x3**  
**SNR = 14.743085079552877**



**Median\_5x5**  
**SNR = 16.32291424092276**



**Closing-then-opening**  
**SNR = 1.7671004692178558**



**Opening-then-closing**  
**SNR = 1.3680700508903874**

salt-and-pepper noise with threshold = 0.1



SNR = -2.1288401835098263



Box\_3x3

SNR = 6.272761382647099



Box\_5x5

SNR = 8.447424874198084



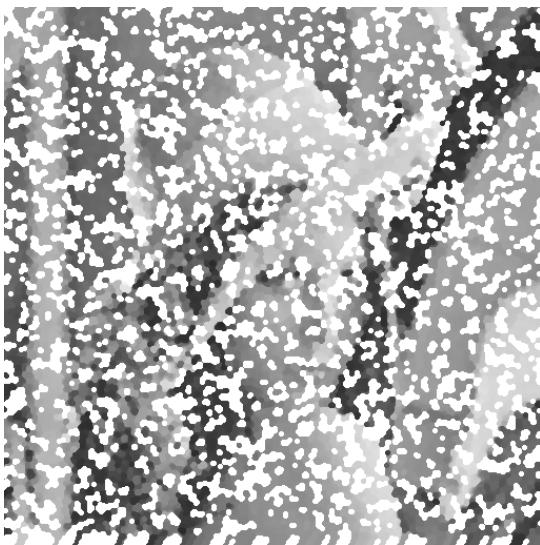
Median\_3x3

SNR = 14.787253212474894



Median\_5x5

SNR = 15.797514692993994



Closing-then-opening

SNR = -3.0830045886966815



Opening-then-closing

SNR = -2.1427359467201397