merge_sort_diagrm

March 30, 2018

In [1]:
```
import matplotlib.pyplot as plt
import numpy as np
```

n = 20000000, m = 1000000

In [2]:
```
P = np.array ([1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16])
T_p = np.array ([0.537994, 0.276714, 0.277866, 0.277002, 0.273925, 0.265846,
                 0.274682,  0.282807,0.278678, 0.268773, 0.278096, 0.282376,
                 0.277064, 0.281191, 0.276035,  0.275454])
S_p = np.array ([2.813530, 5.470132, 5.447453, 5.464444, 5.525826, 5.693755,
                 5.510598, 5.352279, 5.431581, 5.631749, 5.442948, 5.360448,
                 5.463221, 5.383039, 5.483587, 5.495153])
E_p = np.array ([2.813530, 2.735066, 1.815818, 1.366111, 1.105165, 0.948959,
                 0.787228, 0.669035, 0.603509, 0.563175, 0.494813, 0.446704,
                 0.420248, 0.384503, 0.365572, 0.343447  ])
time_qsort = np.array ([1.130943, 1.130943, 1.130943, 1.130943, 1.130943,
                        1.130943, 1.130943, 1.130943, 1.130943, 1.130943,
                        1.130943, 1.130943, 1.130943, 1.130943, 1.130943, 1.130943, ])
```

In [5]:
```
plt.figure(figsize=(12, 5))
plt.title("    T(P)  P")
plt.grid()
plt.scatter(P, T_p)
plt.plot(P, T_p)
plt.plot(P, time_qsort, label="time of qsort", color='g')
plt.legend()
plt.show()

plt.figure(figsize=(12, 5))
plt.title("   S(P)  P")
plt.grid()
plt.scatter(P, S_p)
plt.plot(P, S_p)
plt.show()

plt.figure(figsize=(12, 5))
plt.title("   E(P)  P")
plt.grid()
```

```
plt.scatter(P, E_p)
plt.plot(P, E_p)
plt.show()
```

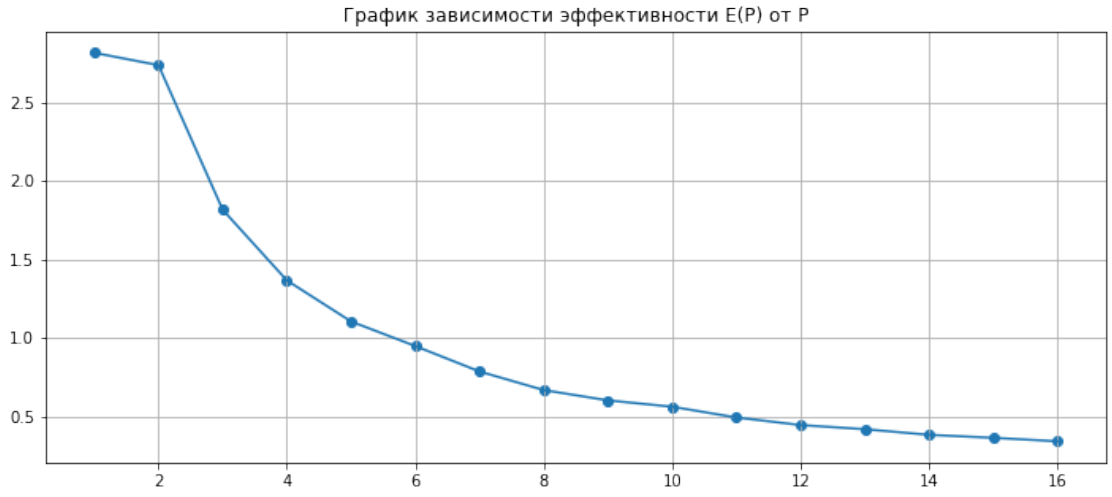
График зависимости эффективности E(P) от P
2.5
2.0
1.5
1.0
0.5
2
4
6
8
10
12
14
16