Functions:

```
function primes = first_n_primes(N)
    tic
    sieve = ones(N);
    primes = [];
    for x = 2:N
        if sieve(x) == 1
            primes(end+1) = x;
            for y = x*x:x:N
                sieve(y) = 0;
            end
        end
    end
    toc
    disp(primes);
end

function trace = trace_1D_mat(v)
    dims = sqrt(length(v));
    trace = 0;
    for x = 1:(dims+1):length(v)
        trace = trace + v(x);
    end
    disp(trace);
end

function result = eval_poly(coefs, x)
    result = coefs(1);
    for i = 2:length(coefs)
        result = result * x;
        result = result + coefs(i);
    end
    disp(result);
end
```

Console Output:

```
>> first_n_primes(1000);
Elapsed time is 0.003394 seconds.
  Columns 1 through 12

    2     3     5     7    11    13    17    19    23    29    31    37

  Columns 13 through 24

   41    43    47    53    59    61    67    71    73    79    83    89

  Columns 25 through 36

   97   101   103   107   109   113   127   131   137   139   149   151

  Columns 37 through 48
```

157 163 167 173 179 181 191 193 197 199 211 223

Columns 49 through 60

227 229 233 239 241 251 257 263 269 271 277 281

Columns 61 through 72

283 293 307 311 313 317 331 337 347 349 353 359

Columns 73 through 84

367 373 379 383 389 397 401 409 419 421 431 433

Columns 85 through 96

439 443 449 457 461 463 467 479 487 491 499 503

Columns 97 through 108

509 521 523 541 547 557 563 569 571 577 587 593

Columns 109 through 120

599 601 607 613 617 619 631 641 643 647 653 659

Columns 121 through 132

661 673 677 683 691 701 709 719 727 733 739 743

Columns 133 through 144

751 757 761 769 773 787 797 809 811 821 823 827

Columns 145 through 156

829 839 853 857 859 863 877 881 883 887 907 911

Columns 157 through 168

919 929 937 941 947 953 967 971 977 983 991 997

```
>> trace_1D_mat(1:2:50);
  125

>> eval_poly([9,8,7,6,5,4,3,2],1);
   44
```