```
close all
clear;clc

Problem_1
Problem_2
Problem_3
Problem_4
```

```
Problem 2

a) Both nozzles deliver the same mass flow rate

b) TRUE.  ("The Mach number at the exit of Nozzle B is larger than that for Nozzle A")
   TRUE.  ("The flow at the exit of Nozzle B is supersonic")
   FALSE. ("The pressure at the exit of Nozzl B is 1 atm")
   TRUE.  ("The flow within both nozzles is isentropic")
   FALSE. ("The pressure at the inlet of Nozzle A is higher than 3.0 atm")

Problem 3

a)  Top/Bottom LE: 207.5017 kPa
    Top/Bottom TE: 43.9519 kPa
   Behind Airfoil: 66.9033 kPa
   Before Airfoil: 101 kPa

b) cd = 0.045322

c) Drag is created due to the pressure differential
   between the leading the trailing edge of the
   airfoil. The difference in pressure is caused
   by the air being accelerated by the expansion
   fan, which increases the Mach number while
   decreasing pressure.

d) (x,y) = (1.6811,0.87076)

e) The shock will bend to the right. Information
   carried by Mach wave cannnot travel back through
   the shock because it violates the second law of
   thermodynamics, and therefore the shock must
   to the right.

Problem 4

a) Pb_min = 771.966 kPa

b) Pe = 46.8305 kPa
   Pb = 46.8305 kPa
   Me = 2.4999

c) Me = 0.19052
   Mt = 0.60936

d) T0   = 636.7174 K
   mdot = 4.8605 kg/s

e) Yes, there is a shock for Pb = 500 kPa
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```
No, there is no shock for Pb = 200 kPa
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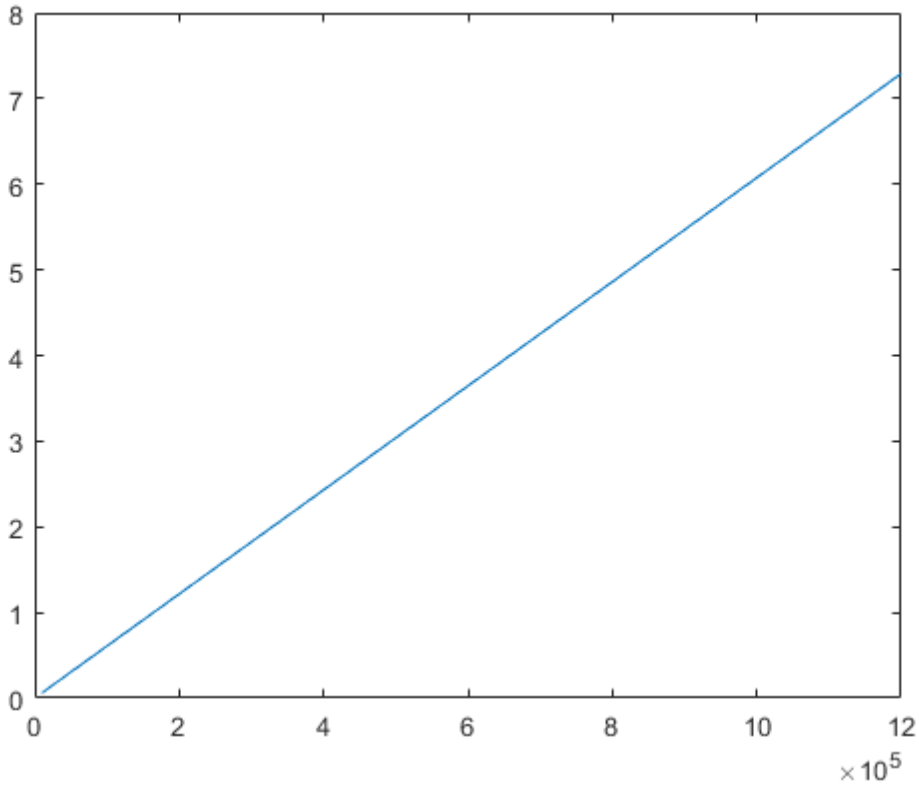

Published with MATLAB® R2018b