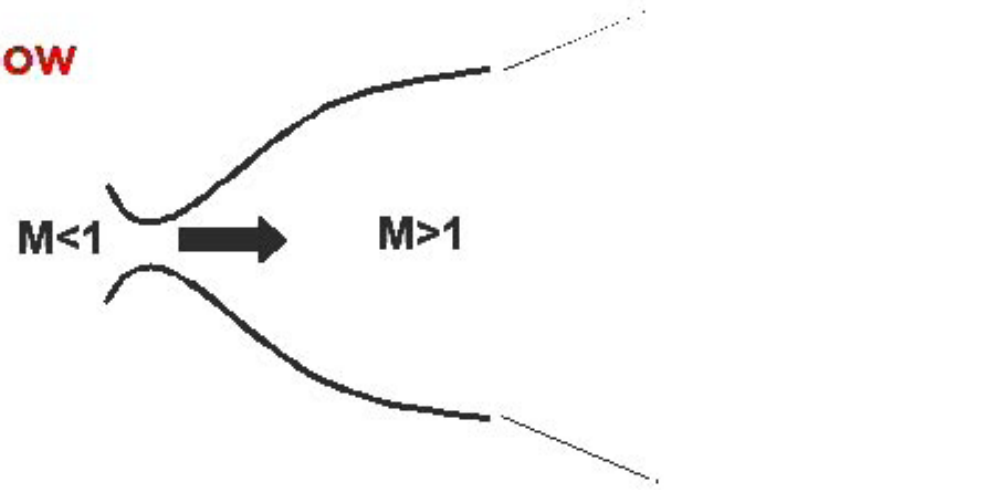
Chapter 6, Question 1:
Rocket Nozzle Performance

The nozzle flow field shown below would be typical of operation

1) at launch
2) in the upper atmosphere
3) in space
4) I don't know



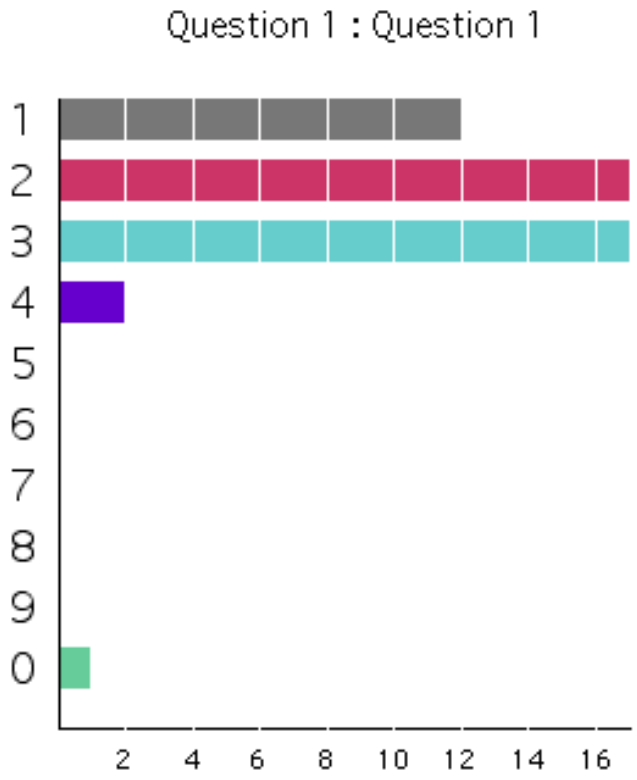
L.O. F

Chapter 6, Question 1 Answer:

The correct answer is 2) or 3)

A nozzle designed for low altitude (high back pressure) will not produce as much thrust at high altitude (low back pressure) as a nozzle specifically designed for low back pressure. As a result, rocket nozzles for launch vehicles are typically designed to operate best at an intermediate pressure. Thus at launch, they see a higher backpressure than ideal (resulting in oblique shocks in the exit plane). At high altitudes (or in space) they typicallly see a lower back pressure than ideal. For these conditions, the flow continues to expand upon leaving the nozzle resulting in an expansion fan.

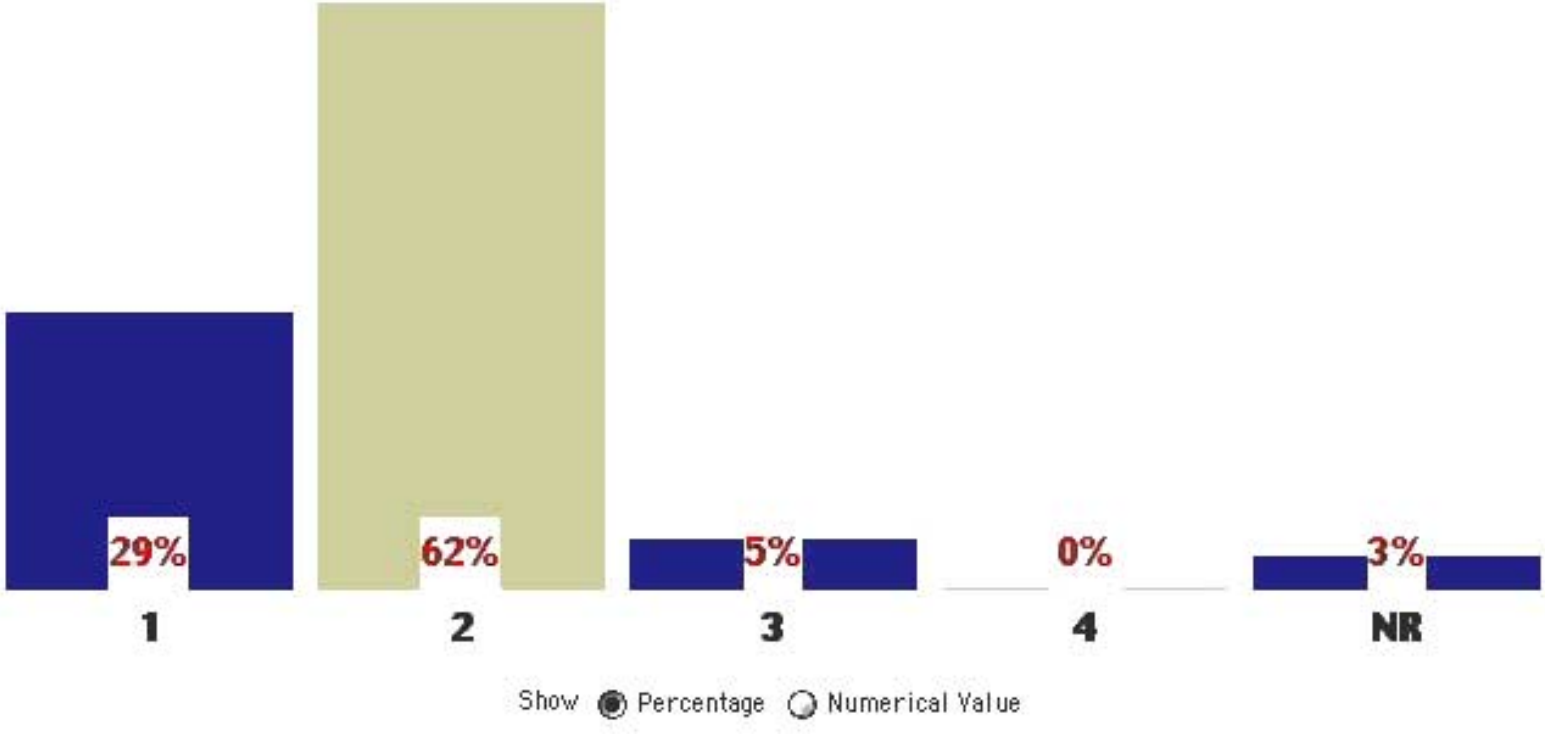
Class performance (2003):



Class performance (2001):

Quiz 2 started at 10:48:34 AM

58 students logged in.



Show (•) Percentage ( ) Numerical Value