

T T T T T TT
T T T T T
T T
T 1

2 1 f r r n n n f r n n r n r n n
r n n r r r n n f n n n
n n (), n r n
r n n r n n n n f
f n, r f n f n n n
n n n n n n n n n n f
r n n f n n n ()
n r r n r n n n
r n r n f r f r r () n
f r n r n f f r n f r n r n n n
T r f r r f n n n n n n ()
n n n n f n n

2 2 n n f r n r n n
r n r n n r n r n f r r
n n r n n n n r n n r n n
r n

2 3 n r n n n n n r n r f r n r
n n r, n r n n r(), n r n n r(), r r
r n f f n n f f r n r n r
n n n n n r f n n n n n
r n f r r r, r r, n r n n n n n r
n r n n n f n n n r

T 2 T TT

2 4 n n n r r r r n n n r
f n n r f n n n n n r n r f
n n r f n n n n n n n n r

2 n r f n n n n n n f r
r n n n n f r, n n r n
f f r r f r

() $\sim r \sim \mathbb{U}\mathbb{U}n \sim \sim r \sim r \mathbb{U}nr \sim n \sim f\sim r \sim , \sim$
 $\sim r \sim r \sim n \sim n \sim r \mathbb{U}n \sim \mathbb{U}n \mathbb{U}\mathbb{U}r \sim f \sim \mathbb{U}n \sim , n \sim , \sim n$
 $n \sim n - \mathbb{U}\mathbb{U}n \sim r \sim n \sim \mathbb{U} \sim , \sim n \sim n \sim n \sim \mathbb{U} \sim n \sim \sim n (\sim n \sim , \sim n$
 $\sim \mathbb{U} \sim n \sim \sim n \sim f\sim r \sim \sim r \sim r \mathbb{U}n \sim \sim n \sim f \sim ff \sim \sim r \sim \sim \sim n) ,$

() $\sim \sim \sim r \sim \mathbb{U}\mathbb{U}n \sim \sim n \sim \sim r \sim \sim n \sim rn \sim n \sim r \mathbb{U}nr \sim \sim n$
 $\sim f\sim rn \sim n - \sim , \sim \sim r \sim \sim r ,$

() $\sim \sim \mathbb{U}n \sim n \sim r \sim \sim \mathbb{U} \sim n \sim \sim n \sim rr \sim n \sim \mathbb{U}n \sim r \sim \sim n \sim$
 $\sim \mathbb{U} \sim \sim rr \mathbb{U} \sim \sim f \sim r \sim \sim r , \sim r \sim \sim r \sim n \sim n \sim r \mathbb{U}n \sim \mathbb{U}n$
 $\mathbb{U}\mathbb{U}r \sim f\sim r \sim r \mathbb{U} \sim \sim n , \sim n , r \sim \sim r \sim \sim n \sim \sim n \sim$
 $r \sim n \sim \sim nr \sim , \sim r \mathbb{U} \sim , \sim r \sim r \sim , n \sim fn \sim \sim n \sim \sim n ,$
 $\sim \mathbb{U} \sim n \sim \sim n \sim \sim r \sim \sim n \sim \sim n \sim r \sim r \sim ,$

() $\sim n , r \sim \sim n \sim r \sim r \sim r \sim / \sim r \sim \sim () \sim n \sim r \sim$
 $\sim n \sim r \mathbb{U}nn \sim / \sim r \sim nr \mathbb{U}nr \sim \sim n ,$

() $\sim \sim \mathbb{U}n \sim rf\sim r \mathbb{U}n \sim \sim r \sim \sim r , \sim r \sim \sim r \sim n \sim n \sim r$
 $\mathbb{U}n \sim \mathbb{U}n \mathbb{U}\mathbb{U}r \sim f \sim \mathbb{U}n \sim n \sim \sim n , \sim nn \sim r \sim$
 $\sim f \sim r \sim rf\sim r \mathbb{U}n \sim , n , \sim \sim n , \sim r \sim , \sim \sim \mathbb{U} \sim , \sim$
 $\sim nn \sim r \mathbb{U}nr \sim \sim n \sim n \sim f\sim r \sim r \sim n \sim \sim r , n \sim \mathbb{U}n \sim n$
 $n \sim , \mathbb{U} \sim \sim \sim r \sim f\sim r \sim \sim n \sim r \sim \sim n , n \sim \sim \sim r$
 $\sim \mathbb{U} \sim \mathbb{U}n \sim \sim n \sim f \sim f\sim r \mathbb{U}n \sim \sim n \sim n ,$

(10) $\sim \sim , \sim r \mathbb{U}nr \sim \sim n \sim \mathbb{U} \sim f \sim \mathbb{U}n \sim n \sim \sim r \sim \sim n$
 $\sim r \sim \sim \mathbb{U} \sim \mathbb{U}n \sim \sim n ,$

(11) $\sim \mathbb{U}n \sim r \mathbb{U}nr \sim \sim n \sim \sim n \sim \mathbb{U} \sim \sim r \sim \sim n \sim$
 $\sim \mathbb{U}n \sim f \sim \mathbb{U}r \sim n \sim \sim \mathbb{U}n \sim ,$

(12) $\sim \sim n \sim \sim r \sim \sim r \sim \sim , \sim r \mathbb{U}nr \sim \sim n \sim f \sim r \sim \sim r \sim n$
 $n \sim r \mathbb{U}n \sim \mathbb{U}n \mathbb{U}\mathbb{U}r \sim , n$

(13) $\sim r \sim , \sim , \sim r \sim \sim r \sim$

$\sim \sim \sim \sim r \sim \sim n \sim \sim n \sim r \mathbb{U}nr \sim \sim n \sim n \sim r \sim r \sim$
 $\sim , \sim r \mathbb{U} \sim \sim n \sim r \sim f \sim r \sim r \sim f \sim \sim \mathbb{U}n \sim .$

$\sim \sim \sim 10 \sim r \mathbb{U}nr \sim \sim n \sim n \sim r \sim r \sim \sim f\sim r \sim r \sim \sim n \sim , \sim r \sim \sim r \sim f$
 $\sim \mathbb{U}n \sim r \sim \sim \sim \mathbb{U}\mathbb{U} \sim , \mathbb{U} \sim \sim r \sim f\sim r$
 $r \sim \sim n \sim \sim n \sim r \sim n \sim \sim r \sim r \sim , nr \mathbb{U} \sim n$
 $f\sim r \sim \sim n \sim r \sim \sim n \sim n \sim r \sim f\sim r \sim \mathbb{U} \sim \mathbb{U}n \sim \sim n . \mathbb{U}nr \sim \sim n \sim n$
 $f\sim r \sim nr \mathbb{U}n \sim \mathbb{U}n \mathbb{U}\mathbb{U}r \sim f \sim \mathbb{U}n \sim \sim , \mathbb{U} \sim$
 $\sim r \sim f\sim r \sim r \sim .$

T 4

2' 11 , u n r ~, r r u n f u n - - - ~r _n.
 ~ ~f ~~~~~ . r ~n - f~r r~ - _n _nf~r u ~n r
 , u n r ~, r _n - , , r r_n. f~r
 u _n ~f ~~~~~ n _u u n _n. r n r ~, ~n ~f
 ~r _n ~~~~~ .

2. 12 $r, n, r, r, r, n, f, n, n, r, f$
 $r, n, r, r, n, f, r, n, n, f, n, n$
 r, f, n, r, n, r, f, n

$$(1) \quad \begin{array}{c} \text{nf} \text{ r } \text{u} \quad \text{n} \text{ f} \quad \text{f} \quad \text{u} \quad \text{n} \quad \text{n} \text{ f} \quad \text{f} \text{ n n} \\ \text{n} \quad \text{r} \quad \text{n} \quad \text{r} \quad \text{n} \end{array},$$
[illegible][illegible]
$$(4) \quad \begin{array}{l} \sim r \sim n \quad r f \sim r \sim n \quad \sim r f \quad , \quad \sim n \quad \sim n \sim \quad \sim n \\ n \quad r \sim f \quad \sim n r \sim n \quad \sim f \quad r \quad r , \quad r \sim r \quad n \quad n \sim r \\ \sim n \quad \sim n \quad \sim n \quad \sim n \quad r , \end{array}$$
[illegible][illegible]

() r - nf r n n n n f r n r n

n r n , f .

$$\begin{aligned} & \frac{\partial}{\partial t} \left(\rho u \right) + \frac{\partial}{\partial x} (\rho u^2) = - \frac{\partial p}{\partial x} + \mu \frac{\partial^2 u}{\partial y^2}, \\ & \frac{\partial}{\partial t} (\rho T) + \frac{\partial}{\partial x} (\rho u T) = k \frac{\partial^2 T}{\partial y^2}. \end{aligned}$$

2' 13

r[~] , r f[~]r[~] u[~]u[~] , r[~] f[~]r[~] r[~] , r[~] r[~] n[~]
n[~]r[~]u[~]n[~] . u[~]n[~]u[~]u[~] r[~] r[~] f[~]~

(1)  n[~] u[~]n[~] fr[~]u[~] u[~] n[~] , r[~] r[~] , ,
f[~] r[~] , r[~] r[~] n[~] n[~]r[~]u[~]n[~] . u[~]n[~]u[~]u[~] r[~] f[~] u[~] n[~]
r[~] r[~] r[~] n[~] f[~] , n[~] u[~]u[~] ,

(2) u[~]u[~] n[~] , rf[~]r[~]u[~]n[~] r[~] n[~] r[~] r[~] ,
r[~] r[~] n[~] n[~]r[~]u[~]n[~] . u[~]n[~]u[~]u[~] r[~] f[~] n[~] rf[~]r[~]u[~]n[~]
r[~] n[~] r[~] n[~] r[~] , r[~] n[~] n[~] r[~] n[~] r[~] ,
r[~] n[~] , r[~] r[~] r[~] r[~] r[~] r[~]
r[~] r[~] , r[~] r[~] n[~] n[~]r[~]u[~]n[~] . u[~]n[~]u[~]u[~] r[~] , n[~]

(3) u[~]u[~] u[~] , r[~] n[~] r[~] n[~] n[~] n[~] n[~] n[~] n[~] f[~]r[~]
r[~] r[~] , r[~] r[~] n[~] n[~]r[~]u[~]n[~] . u[~]n[~]u[~]u[~] r[~] n[~]
r[~] n[~] rf[~]r[~]u[~]n[~] r[~] r[~] , n[~] r[~] n[~] r[~] n[~] n[~]
f[~]r[~] n[~] . n[~] r[~] u[~]u[~] , n[~]
r[~] r[~] f[~]r[~] n[~] r[~] n[~] .

T



2' 14

n[~] f[~] u[~]u[~] n[~] , r[~] , r[~]u[~] n[~] n[~] r[~]r[~] n[~] r[~]
u[~] n[~] .

r[~] , r[~]u[~] n[~] f[~] u[~]u[~] r[~]r[~] r[~] , r[~]
r[~] u[~] n[~] f[~]r[~] n[~] n[~] n[~] r[~] u[~] n[~] f[~] u[~] n[~]
n[~] n[~] n[~] n[~] , n[~] u[~] r[~] .

n[~] r[~]r[~] n[~] r[~] u[~] n[~] u[~] n[~] u[~] n[~] r[~]u[~] n[~] f[~]
u[~]u[~] n[~] r[~] n[~] r[~] n[~] r[~] f[~] f[~]
u[~]u[~] r[~] f[~] u[~]u[~] r[~] r[~]u[~] n[~] f[~] r[~] .

2' 1

n[~] f[~] u[~]u[~] n[~] n[~] r[~]u[~] n[~] f[~]
u[~]u[~] . n[~] f[~] u[~] n[~] n[~] r[~]u[~] n[~] u[~] r[~]
r[~] u[~] r[~] f[~] u[~]u[~] r[~] f[~]r[~]
f[~] u[~] n[~] . n[~] n[~]u[~] , n[~] n[~] f[~] u[~]u[~] r[~] f[~] u[~]u[~] ,
f[~]r[~] n[~] r[~] , r[~]u[~] n[~] f[~]n[~] f[~] n[~] r[~] u[~] .

2' 1

u[~] n[~] f[~] u[~]u[~] r[~] r[~] r[~]u[~] n[~] f[~]
u[~]u[~] , n[~] n[~] n[~] r[~] n[~] n[~] n[~] n[~] , r[~] r[~]
u[~]u[~] r[~] f[~] u[~]u[~] , n[~] r[~] , r[~] n[~] f[~] r[~]u[~] n[~]
f[~] u[~]u[~] u[~] r[~] r[~] u[~] n[~] n[~] / r[~] .

2. 1. r, r, f, r, n, f, r, f
 $r, r, r, f, r, f, r, n, n, n,$
 $/, r, n, r, f, r, n, n, r, r, r, n$
 $n, r, n, /, r, f, r, f, r, n,$
 $n, r, f, r, n, f, r, n, n, r,$
 $f, f, r, f, r, n, n, r, ff,$
 $r, n.$

[illegible][illegible]

a $\frac{1}{n} \sum_{i=1}^n r_i = \bar{r}$, $r_1, r_2, \dots, r_n$ are independent random variables with mean $\bar{r}$ and variance σ_r^2 . The variance of $\bar{r}$ is $\frac{\sigma_r^2}{n}$.

2. 20 n r n n r n r n r n f n
r n r n n n n
n n r n r n n f r n n n . r
n r , n n n n n n n r
r f n n n n f n n
r n n , r r r f r n

21 $\frac{u}{r} \frac{u}{f}$ $\frac{u}{f} \frac{u}{r}$ $\frac{n}{r} \frac{n}{f}$ $\frac{n}{f} \frac{n}{r}$

2. 22

... n n. r , r n n. f n. f

... n r r n r n n n

... n n r n , r ,

r , r r n f () r n ' r r ,

n r n f r .

2. 23

24

2 u r r n u n. f u u n r n
r r nf n u r , u n n
n n r n n f r u n , , r n.

T

T

2 r , r f r u , r n n n u r
f n , r n, n u r n f , f.

2 r u n r r , n n r n n
u ff fr u n r fr n r
 , u n r n r n n f
n n u . r r u n n n r r
r u .

2 n u r n r n u u n n r n
r n n r , n , r n r , r r n f
() r u n ' r r , n r . r
r u nf n r n n r , n , r n
r , r r n f () r r f u n r
n , n n , , r r , r n n
r , n , r n r , r r n f () r r
f u n r n , n n , n r
r , n r u u n fr n , u
r r fr n r n n r .

2 r u r n n n n r n . n f
n n n n r n , n r n r .