2018-10-12, Exam in

Turbulence modeling, MTF270: Answers

1

a) **Show the principles how to derive the transport equation ...**
See p. 119.

b) **The exact Poisson equation for the pressure fluctuation reads ...**
See pp. 132-133.

2

a) **The Boussinesq assumption reads ...**
See Section 11.6.

b) **The slow pressure-strain model reads ...**

See p. 131.

3

a) **The f equation in the V2F model reads ...**
See p. 171.

b) **When formulating a non-linear model, the anisotropy, ...**
See p. 166.

4

a) **Consider the SST $k-\omega$ model.**
See p. 177.

b) **Consider the flow of energy in Fig. 1.**
See p. 455.

5

a) **Give a short description of the method to generate ...**
See Sections 27.1, 27.3 and 27.4

b) **The one-equation RANS model of Spalart & Allmaras reads ...**
See Eqs. 20.2 oand 20.3.