Worksheet 25

Sections 207 and 219
MATH 54

May 2, 2019

Exercise 1. Find a general solution for the given boundary value problems!

(a) $\frac{\partial u}{\partial t} = \frac{\partial^2 u}{\partial x^2}$, $0 < x < \pi$, $t > 0$
$u(0,t) = 0$, $u(\pi,t) = 3\pi$

(b) $\frac{\partial u}{\partial t} = 3\frac{\partial^2 u}{\partial x^2} + x$, $0 < x < \pi$, $t > 0$
$u(0,t) = u(\pi,t) = 0$