

Exercise 13

Prove from first principles that $Q(x, t)$ *must* have the form (4), as follows.

- (a) Assuming uniqueness show that $Q(x, t) = Q(\sqrt{a}x, at)$. This identity is valid for all $a > 0$, all $t > 0$, and all x .
- (b) Choose $a = 1/(4kt)$.