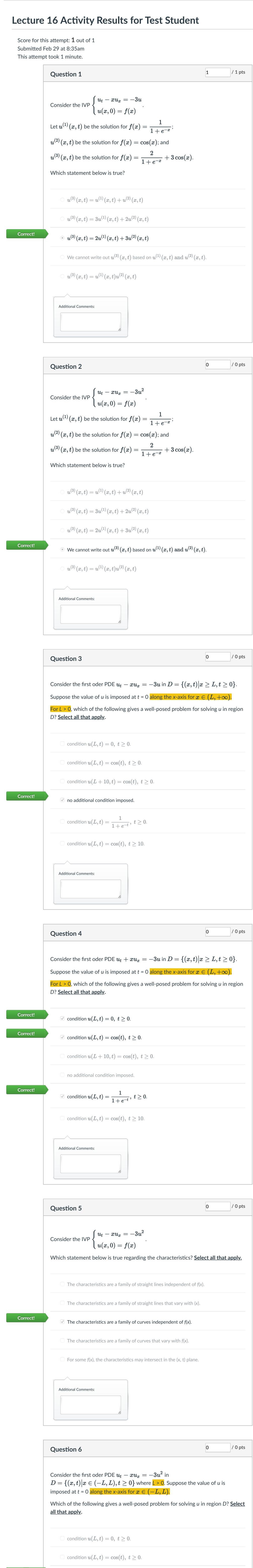
AM-112-0... > Quizzes > Lecture 16... > Test Student Account (6) Score for this attempt: **1** out of 1 Dashboard Submitted Feb 29 at 8:35am This attempt took 1 minute. Courses Question 1  $\mathbb{Z}_{8}$ Groups Consider the IVP  $\left\{egin{aligned} u_t - x u_x = -3u \ u(x,0) = f(x) \end{aligned}
ight..$ Calendar Let  $u^{(1)}(x,t)$  be the solution for  $f(x)=rac{1}{1+e^{-x}};$ Inbox  $u^{(2)}(x,t)$  be the solution for  $f(x)=\cos(x)$ ; and History Course Which statement below is true? Material Website **(**  $u^{(3)}(x,t) = u^{(1)}(x,t) + u^{(2)}(x,t)$ Commons (10)  $u^{(3)}(x,t)=3u^{(1)}(x,t)+2u^{(2)}(x,t)$ Help Correct!  $u^{(3)}(x,t) = 2u^{(1)}(x,t) + 3u^{(2)}(x,t)$ Resources  $u^{(3)}(x,t)=u^{(1)}(x,t)u^{(2)}(x,t)$ **Additional Comments: Question 2** 



/ 0 pts 0 **Question 7** Consider the first oder PDE  $u_t + x u_x = -3 u^2$  in  $D=\{(x,t) | x \in (-L,L), t \geq 0\}$  where L>0. Suppose the value of u is imposed at t = 0 along the x-axis for  $x \in (-L, L)$ . Which of the following gives a well-posed problem for solving *u* in region *D*? **Select** all that apply.  $\square$  condition  $u(L,t)=\cos(t),\;t\geq0.$  $\square$  conditions  $u(-L,t)=e^{-t}$  and  $u(L,t)=\cos(t),\;t\geq 0.$ **Correct!** no additional condition imposed.  $\square$  condition  $u(-L,t)=\cos(t),\;t\geq0.$  $oxed{}$  condition  $u(-L,t)=e^{-t},\;t\geq 0.$ **Additional Comments:** / 0 pts 0 **Question 8** Based on our study, which of the following is true? Select all that apply. Correct!  $\checkmark$ The method of characteristics can be applied to solve first order semi-linear PDEs in (x, t).

 $oxed{u}$  conditions  $u(-L,t)=e^{-t}$  and  $u(L,t)=\cos(t),\;t\geq0.$ 

no additional condition imposed.

 $\square$  condition  $u(-L,t)=\cos(t),\;t\geq0.$ 

 $oxed{}$  condition  $u(-L,t)=e^{-t},\;t\geq 0.$ 

**Additional Comments:** 

 $\Box$  The method of characteristics can be applied to solve the heat equation in (x, t). **Correct!** The method of characteristics can be applied to solve first order semi-linear PDEs in (x, y, t). **Correct!**  $\checkmark$  The method of characteristics can be applied to solve the wave equation in (x, t). The method of characteristics can be applied to solve 1D Sturm-Liouville problems. **Additional Comments:** Fudge Points: You can manually adjust the score by adding positive or negative points to this box. **Update Scores** Final Score: 1 out of 1

Here's the latest quiz results for Test Student. You can modify the points for any question and add more comments, then click "Update Scores" at the bottom of the page.

**Quiz Submissions** 

**Correct!**