

In class work **23** has questions **1** through **1** with a total of **3** points. Turn in your work at the end of class *on paper*. This assignment is due at *Tuesday 21 November 13:20*.

*"Piglet noticed that even though he had a very small heart, it could hold a rather large amount of gratitude."*  
A. A. MILNE

1. Consider the parametrically defined curve  $x = \frac{15t}{1+t^3}$ ,  $y = \frac{15t^2}{1+t^3}$

1 (a) Use Desmos to draw this curve. Reproduce the curve as best you can on here:

1 (b) Find all points on the curve that have a horizontal tangent line. You'll need to solve  $\frac{dy}{dt} = 0$  and  $\frac{dx}{dt} \neq 0$ .

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- (c) Find all points on the curve that have a vertical tangent line. You'll need to solve  $\frac{dx}{dt} = 0$  and  $\frac{dy}{dt} \neq 0$ .