• Section 40, problem 1
• Section 40, problem 6 (but no need to draw sketches)
• Section 40, problem 7

• A string π units long is pulled into the shape \( f(x) = x^2 \) except for the end-points, with are fixed at 0, and then released at time 0 and allowed to vibrate. What is the function \( y(x, t) \) giving the height of point \( x \) at time \( t \)? (That is, what is (17) from Section 40 if \( f(x) = x^2 \).)

• A rod π units long is heated so that the heat \( x \) units from the left end-point is \( x^2 \) degrees Celsius. The end-points are held to ice at precisely 0 degrees Celsius. What is the function \( w(x, t) \) giving the temperature of the band at \( x \) at time \( t \)? (That is, what is (14) from Section 41 if \( f(x) = x^2 \).)