

Name:

1. Find the function  $y(t)$  which satisfies all of the following conditions:

$$3y'' + 5y' - 2y = 0, \quad y(1) = 4, \quad y'(1) = -1.$$

2. Consider the functions

$$f(t) = \sin^2 t, \quad g(t) = \cos^2 t.$$

(a) Calculate  $W(f, g)(0)$ .

(b) Are  $f$  and  $g$  linearly dependent or linearly independent on the interval  $(-\pi, \pi)$ ?