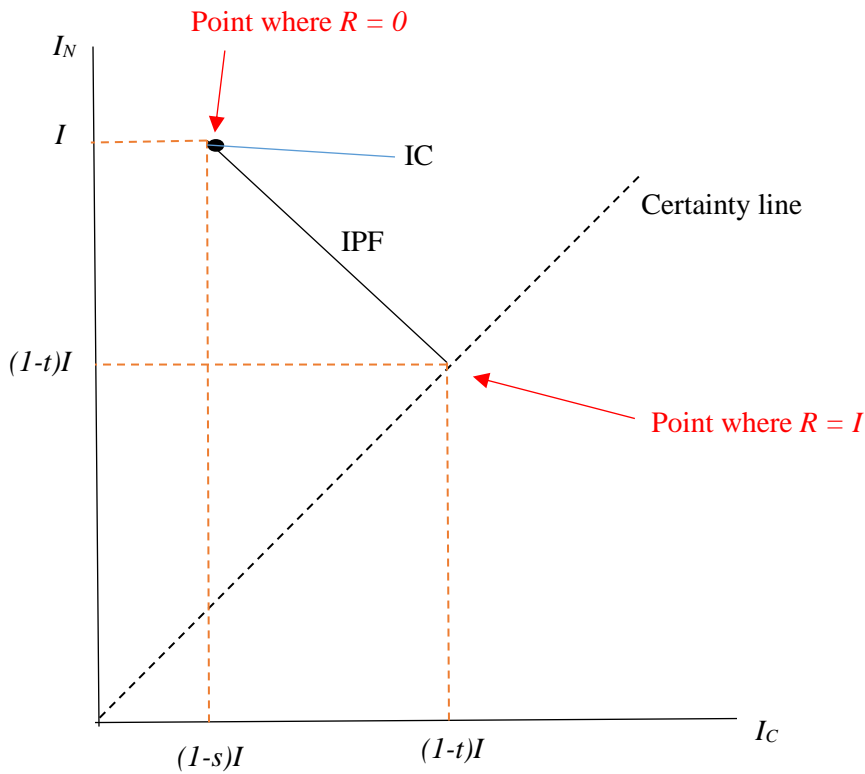


Quiz #5 (Answer Key)  
 ECNS 316  
 Spring 2020

Name \_\_\_\_\_

**1.) (10 points)** Consider the tax evasion model we covered in class where  $p_c$  is the probability of conviction,  $s$  is the sanction (i.e., penalty tax rate),  $I$  is actual income,  $R$  is reported income, and  $t$  is the income tax rate. Illustrate graphically the optimal level of reported income chosen by a taxpayer who is risk neutral (and state any necessary assumptions you had to make for this chosen level of reported income). In your graph, make sure to show the income possibilities frontier (IPF), certainty line, and the vertical and horizontal axis values that correspond to the points on the IPF where  $R = 0$  and  $R = I$ .



For the corner solution shown above, we are assuming that  $t/(s-t) > p_c/(1-p_c)$ . If  $t/(s-t) < p_c/(1-p_c)$ , then all income would be reported (i.e., set  $R = I$ )

**2.) (5 points)** Illustrate graphically what happens to the IPF when the tax rate,  $t$ , goes up. Draw your graph carefully and be precise in your illustration.

Your IPF becomes steeper as it rotates clockwise around the point where  $R = 0$ .

**3.) (5 points)** Illustrate graphically what happens to the IPF when income increases. Draw your graph carefully and be precise in your illustration.

This is simply a shift out in the IPF.