

MAT123, Paper Homework 3
 due in recitation the week of 9/21

The amount of federal income tax withheld from a weekly paycheck in 2015 is specified on page 45 of [IRS Publication 15\(2015\)](#), reproduced below.

TABLE 1—WEEKLY Payroll Period

(a) SINGLE person (including head of household)—				(b) MARRIED person—			
If the amount of wages (after subtracting withholding allowances) is:		The amount of income tax to withhold is:		If the amount of wages (after subtracting withholding allowances) is:		The amount of income tax to withhold is:	
Not over \$44		\$0		Not over \$165		\$0	
Over—	But not over—			Over—	But not over—		
		of excess over—					of excess over—
\$44	—\$222	\$0.00 plus 10%	—\$44	\$165	—\$520	\$0.00 plus 10%	—\$165
\$222	—\$764	\$17.80 plus 15%	—\$222	\$520	—\$1,606	\$35.50 plus 15%	—\$520
\$764	—\$1,789	\$99.10 plus 25%	—\$764	\$1,606	—\$3,073	\$198.40 plus 25%	—\$1,606
\$1,789	—\$3,685	\$355.35 plus 28%	—\$1,789	\$3,073	—\$4,597	\$565.15 plus 28%	—\$3,073
\$3,685	—\$7,958	\$886.23 plus 33%	—\$3,685	\$4,597	—\$8,079	\$991.87 plus 33%	—\$4,597
\$7,958	—\$7,990	\$2,296.32 plus 35%	—\$7,958	\$8,079	—\$9,105	\$2,140.93 plus 35%	—\$8,079
\$7,990		\$2,307.52 plus 39.6%	—\$7,990	\$9,105		\$2,500.03 plus 39.6%	—\$9,105

1. Let x represent the weekly wages of a single person (after subtracting withholding allowances). Write a function $W(x)$ which gives the amount of taxes that will be withheld during that pay period, according to the table. What is the domain of this function?

2. How much federal tax should be withheld from the weekly paycheck of a single person who gets a weekly salary of \$510.00 per week and has a withholding allowance of \$76.90 per week?