

Tax Time!

For 2007, single filers have an exemption of \$5350 and a standard deduction of \$3400. The tax brackets are as follows.

If your taxable income is between:	Your tax bracket is:
\$0 and \$7,825	10%
\$7,825 and \$31,850	15%
\$31,850 and \$77,100	25%
\$77,100 and \$160,850	28%
\$160,850 and \$349,700	33%
\$349,700 and above	35%

Example: Suppose you earned a total \$50,000 in 2007. Before calculating your tax, you first have to determine your taxable income by subtracting the exemption and standard deduction (a total of \$8750) from your total income. This will give you a taxable income of \$41,250. Your tax is now calculated as follows:

$$\begin{aligned}(\$7,825 - 0) \times 10\% &= \$782.50 \\(31,850 - 7,825) \times 15\% &= 3,603.75 \\(41,250 - 31,850) \times 25\% &= 2,350.00 \\ \hline & \mathbf{\$6,736.25}\end{aligned}$$

- 1) Let i = your taxable income in dollars and t = the amount you would owe in federal income tax in dollars.
 - a) If $0 < i \leq 7,825$, find a formula for t .
 - b) If $7,825 < i \leq 31,850$, find a formula for t .
 - c) If $31,850 < i \leq 77,100$, find a formula for t .
 - d) If $77,100 < i \leq 160,850$, find a formula for t .
- 2) Each formula that you determined above should be simple linear functions. If you have not done so, simplified your formulas into the $y = mx + b$ form.
- 3) If you graphed your four linear functions on one set of axes, would they be connected or would there be gaps between the lines? If there were gaps, what would this mean?

