

Problem statement The income tax rate is the percent of income which is owed to the government. For example, if the tax rate is 7%, then the tax owed on an income of \$10,000 is \$700. Many governments have progressive income taxes, which have varying tax rates which increase when income increases.

In the country of Bxwy, the tax rate on income below \$10,000 is 0%, the tax rate on income between \$10,000 and \$30,000 is 4%, the tax rate on income between \$30,000 and \$75,000 is 12%, the tax rate on income between \$75,000 and \$120,000 is 19%, and the tax rate on income above \$120,000 is 25%. The tax law also states that the total tax owed must be a continuous function of income.

Describe the (piecewise-defined) function $f(x)$ as clearly as possible by formulas. Here x is the income of a resident of Bxwy, and $f(x)$ is the tax owed on that income. Graph $y = f(x)$ for x between 0 and 150,000.