Calculating Income Tax Deductions | MEL4E

Motivation:

Two friends make very similar salaries. Jonas makes $45,000 per year, and his friend Serge makes $46,000.

We are going to calculate each friend's net pay using just the income tax percentage in the table at the right, and see if that is fair.

Taxable income	2016
$11,475 - $41,536	20.05%
$41,537 -$45,282	24.15%
$45,283 - $73,145	29.65%
$73,146 - $83,075	31.48%
$83,076 - $86,177	33.89%
$86,178 - $90,563	37.91%
$90,564 - $140,388	43.41%
$140,389 - $150,000	46.41%
$150,001 - $200,000	47.97%
$200,001 - $220,000	51.97%
Over $220,000	53.53%

Jonas: Salary of $45,000			
Deduction Type	Rate (%)	Tax Rate as a Decimal	Deduction Amount (Salary x Decimal)
Combined Tax	24.15%	0.2415	$0.2415 \times 45,000 = \$10,867.50$
After Tax Net Pay			$\$34,132.50$

Serge: Salary of $46,000			
Deduction Type	Rate (%)	Tax Rate as a Decimal	Deduction Amount (Salary x Decimal)
Combined Tax	29.65%	0.2965	$0.2965 \times 46,000 = \$13,639$
After Tax Net Pay			$\$32,361$

Who took home more money after income taxes? Jonas takes home more.

Does that seem fair? NO

Today we will talk about how this income tax is calculated more fairly using tax brackets.

KEY IDEA: You pay 20.05% on earnings up to $\$41,536$. Then you pay 24.15% on earnings between $\$41,537$ - $\$45,282$, and ~~so forth~~ so on.

Example: Let's calculate their taxes using this new method...

Jonas: Salary of $45,000			
Tax Bracket	How much of bracket is taxed?	Rate (decimal)	Deduction Amount (Bracket amount x Decimal)
$0 – $11,475	11,475	0	0 × 11,475 = $0
$11,476 - $41,536	30,060	0.2005	0.2005 × 30,060 = $6,027.03
$41,537 - $45,282	45000 − 41,537 = 3,463	0.2415	0.2415 × 3,463 = $836.31
~~$45,283 - $73,145~~		~~0.2965~~	
Total Tax Deductions			$6,863.34
After Tax Net Pay			$38,136.66

Serge: Salary of $46,000			
Tax Bracket	How much of bracket is taxed?	Rate (decimal)	Deduction Amount (Bracket amount x Decimal)
$0 – $11,475	11,475	0	$0
$11,476 - $41,536	30,060	0.2005	$6,027.03
$41,537 - $45,282	3,745	0.2415	0.2415 × 3,745 = $904.42
$45,283 - $73,145	46000 − 45283 = 717	0.2965	0.2985 × 717 = ~~$218.62~~ $212.59
Total Tax Deductions			$7,144.04
After Tax Net Pay			$38,855.96

This method ensures that Canadians pay a fair share of income tax, and aren't penalized for jumping up into a new tax bracket, by paying thousands more in income tax.