4E # 35, 38, 54  5A # 16, 17, 21, 36, 38, 48

4E 35) Suzanne

- standard deduction: $5,190 (exemption: $3,200)
- wages: $33,200
- interest: $3,550
- tax deferred retirement plan: $500
- charitable contributions: $450

\[
\text{Gross income} = 33,200 + 3,550 = 33,550
\]
\[
\text{Adjusted gross income} = 33,550 - 500 = 33,050
\]
\[
\text{Taxable income} = 33,050 - 33,000 - 5150 = 24,600
\]

\[
\begin{array}{c|c|c|c}
\text{tax rate} & \text{tax rate applied to} & \text{tax} \\
\hline
10\% & \text{up to 7550} & \text{755} \\
15\% & \text{up to 24,600} & \text{24,600 - 7550} = \text{17050} \\
& & \text{24.600} & \text{-} \\
\end{array}
\]

\[
\text{Total tax} = 755 + 2457.5 = 3212.5 \text{ dollars}
\]

38) Emily Juan

married, file jointly

\[
\begin{align*}
\text{75,300} & \quad \text{wages} \\
+ \text{2000} & \quad \text{rent} \\
\text{1650} & \quad \text{interest} \\
\hline
\text{78,950} & \quad \text{gross income}
\end{align*}
\]

\[
\text{Adjusted gross income} = 78,950 - 13,700 - 12,850 = 52,900
\]

\[
\text{Total tax} = (15,100 \times \frac{10}{100}) + (52,900 - 15100) \times \frac{15}{100} = 1510 + 5670 = 7180
\]
54) 15% tax bracket
rent for the apartment: $600/month
monthly mortgage: $675/month
of which $600 per month goes for interest
Because $600 is the mortgage interest it is not taxable so your tax will be
600 \times 15\% = $90 less per month.

So even though you are paying $675 for mortgage, you gain $90 in taxes.
So you really pay $585. So owning the house is better than renting in the first year.

5A #21 Does not make sense. The treatment group should be given C and the control group nothing!

#36. step 1: population is all high school students;
goal is to determine percentage of vegetarians among them
Step 2: choose a representative sample.
Step 3: Determine the percentage of vegetarians in the sample.
Step 4: Infer percentage of vegetarians among all students.
Step 5: Assess results and formulate conclusion.

#38. students enrolled in a required math class would be the most representative because it is more random since all students have to take it.

#48 It is an observational study; in fact a case-control study. Cases are participants who exercise regularly; controls are participants who do not exercise regularly.