

**REALLY?  
REALLY! REVISITED**

Before students do these regression calculations, make sure that the class is comfortable with coordinates.

**ANSWERS**

2.  $0.20x - 0.075y$  if 20% of medical expenses exceeds 7.5% of adjusted gross income, otherwise the amount is 0.

1. Use the Tax Freedom Day data to create a line graph. Let the  $x$ -axis represent that calendar year and the  $y$ -axis represent the numerical day of the year on which Tax Freedom Day falls. Hint: April 1st is the 91st day of a non-leap year.
2. Use the statistical features of your graphing calculator to determine the 4th degree quartic regression curve for the Tax Freedom Day data. Since we are beginning our list with the 1993 Tax Freedom Day, that year will be represented as year 1. The ordered pairs in the list should have the form (year number, day number). For example, the April 21st, 1993 Tax Freedom Day would be represented as the ordered pair (1, 111). That is, 1993 is the first year in our chart and April 21st is the 111th day of that year. Sketch the graph and write the equation as displayed on the calculator. *See margin.*
3. Use your regression equation to predict the Tax Freedom Day for this year. Then, search the Internet to find the day that has been named as this year's Tax Freedom Day. How good of a predictor was your regression equation? *Answers will vary depending on year.*

**Applications**

1. Jake and Gloria are married, filing jointly. Their taxable income without deductions was \$120,440. They were able to reduce their total income by \$25,381 using Form 1040 and Schedule A. How much did they save in tax by claiming these deductions? Use the tax tables in the Appendix. **\$6,354**
2. The Lerner's had  $x$  dollars in medical expenses. Medical insurance covered 80% of these expenses, so they had to pay 20% of the medical bills. The IRS allows medical and dental expenses deductions for the amount that exceeds 7.5% of a taxpayer's adjusted gross income. Their adjusted gross income was  $y$  dollars. Express the amount they can claim as a medical deduction algebraically. *See margin.*
3. Determine the tax for each filing status and taxable income amount listed using the tax tables in the Appendix. *1.527*
  - a. single \$97,642 **\$21,313**
  - b. head of household \$95,100 **\$18,844**
  - c. married filing jointly \$99,999 **\$17,681**
  - d. married filing separately \$99,002 **\$22,099**
  - e. Given a taxable income amount  $t = \$97,226$ , express the tax table line that would be used in compound inequality notation.  **$t \geq 97,200$  and  $t < 97,250$**
  - f. Given the taxable income amount  $t = \$95,656$ , express the tax table line that would be used in interval notation.  **$95,650 \leq t < 95,700$**

## TEACH

### Exercise 7

For Exercise 7, students need the maximum taxable income and correct Social Security and Medicare percents.

## ANSWERS

6.

$$f(x) = \begin{cases} 0.10x & 0 < x \leq 8,025 \\ 0.15x - 401.25 & 8,025 < x \leq 32,550 \\ 0.25x - 3,656.25 & 32,550 < x \leq 65,725 \\ 0.28x - 5,648 & 65,725 < x \leq 100,150 \\ 0.33x - 10,635.50 & 100,150 < x \leq 178,850 \\ 0.35x - 14,212.50 & x > 178,850 \end{cases}$$

4. Use the table to answer the questions below.

Schedule Y-1— If your filing status is **Married filing jointly or Qualifying widow(er)**

If your taxable income is:		The tax is:	
Over—	But not over—		of the amount over—
\$0	\$16,050	..... 10%	\$0
16,050	65,100	<b>\$1,605.00 + 15%</b>	<b>16,050</b>
65,100	131,450	<b>8,962.50 + 25%</b>	<b>65,100</b>
131,450	200,300	<b>25,550.00 + 28%</b>	<b>131,450</b>
200,300	357,700	<b>44,828.00 + 33%</b>	<b>200,300</b>
357,700	.....	<b>96,770.00 + 35%</b>	<b>357,700</b>

- a. What is the tax for taxpayers filing jointly with a combined taxable income of \$134,786? **\$26,484.08**
- b. A married couple's tax is approximately \$30,000. What is their approximate taxable income? **\$147,343**

5. Let  $x$  represent the taxpayer's taxable income and  $y$  represent the tax. Express the line of the worksheet below as a linear equation in  $y = mx + b$  form. Use interval notation to define the income range on which each of your equations is defined.  **$y = 0.25 - 4,937.50$  when  $100,000 \leq x < 112,650$**

**Section D** — Use if your filing status is **Head of household**. Complete the row below that applies to you.

Taxable income. If line 43 is —	(a) Enter the amount from line 43	(b) Multiplication amount	(c) Multiply (a) by (b)	(d) Subtraction amount	Tax Subtract (d) from (c). Enter the result here and on Form 1040, line 44
At least \$100,000 but not over \$112,650	\$	× 25% (.25)	\$	\$ 4,937.50	\$

6. Write a piecewise function to represent the tax  $y$  for the taxable income interval in the schedule below for a taxpayer whose filing status is married filing separately. **See margin.**

Schedule Y-2— If your filing status is **Married filing separately**

If your taxable income is:		The tax is:	
Over—	But not over—		of the amount over—
\$0	\$8,025	..... 10%	\$0
8,025	32,550	<b>\$802.50 + 15%</b>	<b>8,025</b>
32,550	65,725	<b>4,481.25 + 25%</b>	<b>32,550</b>
65,725	100,150	<b>12,775.00 + 28%</b>	<b>65,725</b>
100,150	178,850	<b>22,414.00 + 33%</b>	<b>100,150</b>
178,850	.....	<b>48,385.00 + 35%</b>	<b>178,850</b>

7. Ann's W-2 form reported total Medicare Wages as \$88,340. She contributed \$50 per weekly paycheck to her FSA and \$90 per weekly paycheck to her retirement plan. She received a 1099 form from her bank for her savings account interest in the amount of \$800 and a 1099 form from a book publisher for royalties in the amount of \$3,700. What is Ann's adjusted gross income? **\$85,560**
8. Mike pays \$8,000 in property taxes, but receives a 28% tax deduction for it. What is Mike's net expense for property taxes? **\$5,760**

9. Identify the error(s) on Rorie's W-2 form below.  
 Box 1 and Box 16 should be \$86,100.

ch.7 Review

a Employee's social security number <b>000-00-0000</b>		Safe, accurate, FAST! Use <b>efile</b>		Visit the IRS website at www.irs.gov/efile.	
b Employer identification number (EIN) <b>00-0000000</b>		1 Wages, tips, other compensation <b>\$96,900.00</b>	2 Federal income tax withheld <b>\$23,256.00</b>		
c Employer's name, address, and ZIP code <b>Saturn Publishing Company 251 Broadway Taftsville, VT 05073</b>		3 Social security wages <b>\$96,900.00</b>	4 Social security tax withheld <b>\$6,007.80</b>		
		5 Medicare wages and tips <b>\$96,900.00</b>	6 Medicare tax withheld <b>\$1,405.05</b>		
		7 Social security tips	8 Allocated tips		
d Control number <b>2187690</b>		9 Advance EIC payment	10 Dependent care benefits		
e Employee's first name and initial <b>Rorie Welles</b>		11 Nonqualified plans	12a See instructions for box 12 <b>E \$7,600.00</b>		
615 Memorial Dr. Sudbury, VT 05233		13 Statutory employee <input type="checkbox"/> Retirement plan <input checked="" type="checkbox"/> Thrift-party sick pay <input type="checkbox"/>	12b		
		14 Other <b>caf125 \$3,200.00</b>	12c		
f Employee's address and ZIP code			12d		
15 State Employer's state ID number	16 State wages, tips, etc. <b>\$96,900.00</b>	17 State income tax <b>\$9,978.00</b>	18 Local wages, tips, etc.	19 Local income tax*	20 Locality name

**Exercises 10-12**  
 In Exercises 10-12, students complete tax forms. Have students check their answers with you every few lines. Walk around the room with your key and place a check next to the last item you see that student again during the period or the next day, you will know what you have already checked. For this reason, filling in these forms are not ideal homework assignments; students need frequent feedback to learn the forms better.

**ANSWERS**

- 10. adjusted gross income: \$102,936; taxable income: \$74,536; tax due: \$11,319; refund: \$9,981
- 11. adjusted gross income: \$67,400; taxable income: \$58,450; tax due: \$10,963; refund: \$1,033
- 12. total itemized deductions: \$23,656; interest: \$1,328; dividends: \$776; adjusted gross income: \$91,818; taxable income: \$50,662; tax due: \$6,799; owe: \$410

For each exercise, complete the indicated forms to find adjusted gross income, taxable income, tax due, and amount of refund or amount owed. If appropriate, find the total itemized deductions, and the interest and ordinary dividends. Round all answers to the nearest dollar. Use the tax tables in the Appendix.

10. Katie and Ken are married with three children. The following information was reported on their W-2 forms.

They received \$924.78 in interest on bank deposits and \$1,011 in stock dividends. Fill out a Form 1040A for Katie and Ken.

	Katie	Ken
Federal income tax withheld	\$ 9,800	\$11,500
Wages	\$49,000	\$52,000

11. Von is a single taxpayer. His wages for the year are \$66,200. The amount withheld for federal taxes was \$9,930. His bank interest is \$1,200. Fill in his 1040EZ form.
12. Connor and Samantha Lamberti are married with three children. Their total wages for the year were \$90,114. The total amount withheld from their paychecks for federal taxes was \$7,209.12. They received \$1,328 in bank interest and \$776 in dividends. Samantha had \$400 in educational expense deductions.
- Their itemized deductions are: Medical Expenses: prescriptions \$550, doctors \$1,340, dentists \$1,761, eyeglasses \$430; Taxes: State income tax withheld \$7,108, real estate tax \$8,219; Interest Paid: home mortgage loan \$6,629; Contributions: cash, \$1,000; used clothing, \$550; old toys \$150; Casualty and Theft Loss: Luggage stolen while on vacation \$4,600; and Job Expenses: union dues, \$1,350; resume costs, \$75.
- Complete a current Form 1040 for them, including Schedules A and B. Round all entries to the nearest dollar.