Overview
Spreadsheet skills are necessary to convert data to information in business. This event recognizes FBLA members who demonstrate that they have acquired skills for spreadsheet development in business.

This event consists of two parts: an objective test taken at the NLC and a skills production test taken prior to the NLC.

Competencies
The topics listed below are prioritized, listing the most important content areas of the tests.

Objective Test Competencies
- Data-entry techniques
- Editing capabilities
- Create formulas
- Use functions (including those containing absolute values)
- Format
- Chart and analyze chart data

Production Competencies
- Basic mathematical concepts
- Data organization concepts
- Use data by creating formulas
- Use functions
- Generate graphs for analysis purposes
- Use pivot tables
- Create macros
- Filter and extract data

Procedures/Tips
- Review the Competitive Events Tips in the front of the book.

Spreadsheet Applications Sample Questions

1. The ____ function counts the number of cells containing numbers.
   a. SUM
   b. COUNT
   c. AVERAGE
   d. MAX

2. The ____ function returns the smallest value in a set of numbers.
   a. MAX
   b. MIN
   c. SMALLEST
   d. LEAST

3. The ____ function calculates the present value of a loan or investment based on periodic, constant payments.
   a. PV
   b. NPER
   c. RATE
   d. PMT

4. A function that determines whether a condition is true or false is called a/an ____ function.
   a. comparative
   b. operational
   c. logical
   d. relational

5. The ____ function returns the value TRUE if all arguments are true, and FALSE if one or more arguments is false.
   a. OR
   b. NOT
   c. AND
   d. FALSE

6. The ____ operator checks if the value in a given cell is less than the value in another cell.
   a. <=
   b. <
   c. >
   d. <>

7. The ____ operator checks if the value in a given cell is not equal to the value in another cell.
   a. <=
   b. <>
   c. <
   d. >

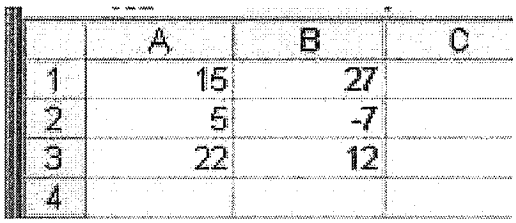
8. The ____ function calculates the number of periods required to pay off a loan or investment.
   a. FV
   b. NPER
   c. PMT
   d. PV

9. The date functions use your computer's internal ____ to return a value.
   a. cache
   b. clock
   c. matrix
   d. calculator

10. You need to convert the number 5.663 to 5.7; what function should you use?
    a. ROUND()
    b. SUM()
    c. TRUNCATE()
    d. MEDIAN()

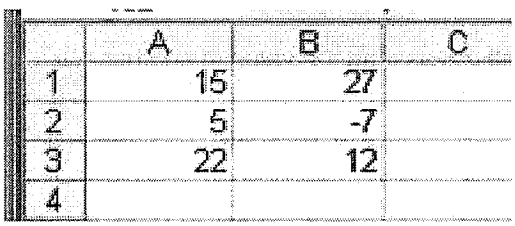
11. The ____ function calculates the average of a collection of numbers.
    a. AVERAGE()
    b. MEAN()
    c. AVE()
    d. MODE()

12. The value of which function is automatically updated whenever you reopen a workbook?
    a. NEW()
    b. DATE()
    c. TODAY()
    d. TIME()

13. 

	A	B	C
1	15	27	
2	5	-7	
3	22	12	
4			

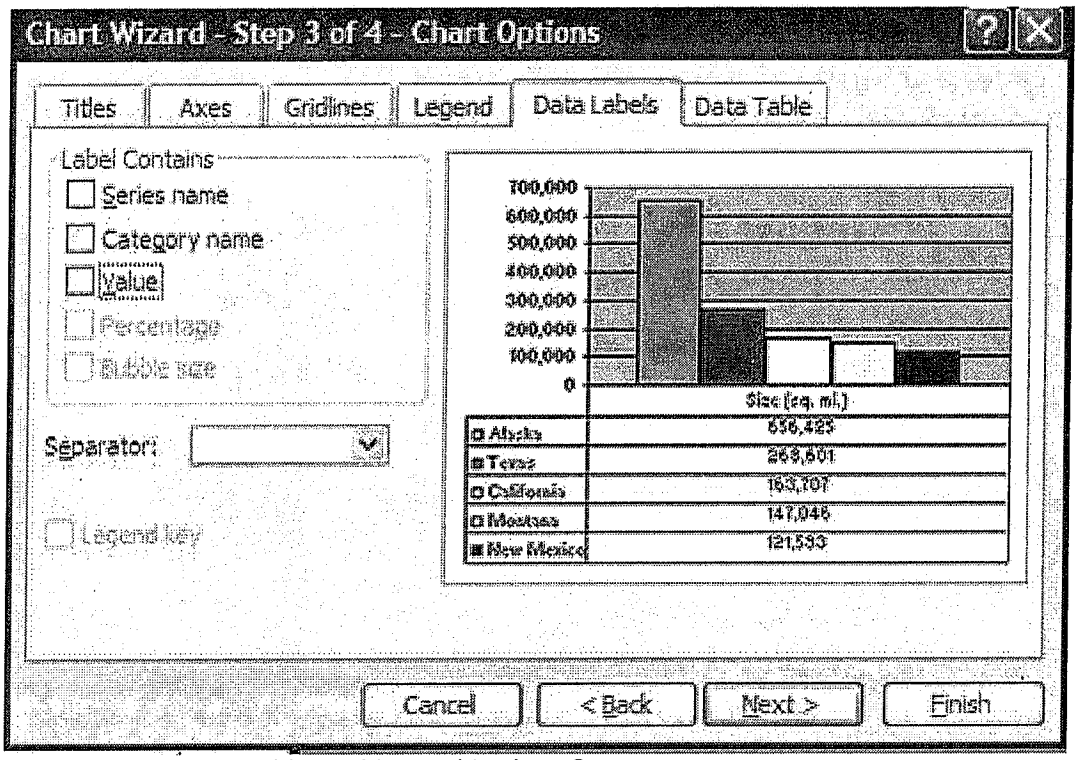
Using the data from the worksheet shown above, what will be displayed by the following formula: =MIN (B1:B3)?
    a. 12
    b. 15
    c. 5
    d. -7

14. 

	A	B	C
1	15	27	
2	5	-7	
3	22	12	
4			

Using the data in the worksheet shown above, what will be displayed by the formula =IF(A1<MIN(B1:B3),0,MAX(A1:A3))?
    a. A1
    b. 0
    c. 22
    d. 27

15. ___ marks are small lines that intersect an axis and represent the scale used for measuring values.
    a. Series
    b. Tick
    c. Value
    d. Index



16.
   a. What chart option is visible on this graphic above?
   b. value data labels
   c. data table
   d. legend
   e. series name data labels

17. To create a chart, the first step is to:
   a. identify the legend of the chart
   b. click the Chart Wizard button
   c. identify the X-axis of the chart
   d. select the cells that contain the data you want to appear in the chart

18. What displays charted data in a grid at the bottom of the chart?
   a. data table
   b. data series
   c. sheet tab
   d. worksheet

19. The ___ button is the gray rectangle in the upper-left corner of the worksheet where the row and column headings meet.
   a. cell selector
   b. column selector
   c. select all
   d. row selector

	A	B	C	D	E	F	G	H
22				Purchase		Lease		
23								
24	Present value of payments			$ 24,000		$ 24,154		
25	Present value of sales tax			$ 1,440		$ 1,277		
26	Present value of property tax			$ 754				
27	Total			$ 26,194		$ 25,431		
28				Sales		PV		Cumul
29	Month		Payment	Tax	Total	Factor	PV	PV
30								
31	0		$ 280	360	$ 640	100.0%	640.00	640.00
32	1		$ 280		$ 280	99.3%	277.92	917.92
33	2		$ 280		$ 280	98.5%	275.85	1193.76
34	3		$ 280		$ 280	97.8%	273.79	1467.56
35	4		$ 280		$ 280	97.1%	271.76	1739.31
36	5		$ 280		$ 280	96.3%	269.73	2009.04
37	6		$ 280		$ 280	95.6%	267.72	2276.77

20. This spreadsheet fragment shows that a spreadsheet could be used to do what?
    a. demonstrate a real rate of return
    b. predict interest to be earned on an investment
    c. calculate the risk premium in a market
    d. make a purchasing decision

21. Which button available on the pivot table toolbar opens the pivot table field dialog box so you can modify options for the selected field?
    a. always display items
    b. field select
    c. field settings
    d. formatting display

22. Why would a page field be used in a pivot table?
    a. to analyze two or more spreadsheets
    b. to break the report into separate "pages"
    c. to identify which data will be summarized
    d. to bring in data from more than one place

23. Where can macros be run?
    a. saved worksheets
    b. protected sheets
    c. ery hidden sheets
    d. hidden sheets

24. Which of the following should you consider using if you share your macros with others?
    a. digital signature
    b. macro security
    c. digital certificate
    d. Visual Basic Editor

25. Which of the following is **not** true about extracting data from a spreadsheet?
    a. Data can be extracted from many worksheets to one or to individual worksheets.
    b. The same data range can be extracted from many workbooks.
    c. There is only one way to extract data from a spreadsheet.
    d. The source workbook may be listed beside the extraction.

26. What criteria must be set if you want to display salespeople whose sales for a week were at least $1000, but not over $2500?
    a. is greater than or equal to 1000 AND is less than or equal to $2500
    b. is greater than 1000 AND is less than or equal to $2500
    c. is equal to 1000 AND is less than 2500
    d. is greater than or equal to 1000 OR is less than or equal to 2500

27. $B6 is an example of a/an ___ reference.
    a. mixed
    b. relative
    c. absolute
    d. dollar

28. If the formula =D1*C1 is copied from cell D2 to cell D3, what formula will appear in cell D3?
    a. =D1*C1
    b. =D2*D1
    c. =D2*C2
    d. =D2*C1

29. What does the FV function calculate?
    a. The future value of an investment based on fixed payments and a varying interest rate.
    b. The formula valuation of an investment based on fixed payments and a fixed interest rate across many time periods.
    c. The final value of an investment after 100 payments have been made
    d. The future value of an investment based on fixed payments and a fixed interest rate across equal time periods.

30. What refers to a range of cells where the range depends on the content of the cells?
    a. valid range
    b. named range
    c. defined range
    d. dynamic named range

Spreadsheet Applications Production Test

Job 1—Spreadsheet with Pivot Table

1. Input the data for TNT Corporation's first quarter sales as shown below:

   TNT Corporation Quarterly Sales For the Quarter Ending March 31, 2007

Salesperson	Region	Product Line	Sales
Julie Rankin	NW	Moderate	$25,955.00
Michael Andrews	NE	Value	$19,881.00
Regina Kane	NW	Value	$16,249.00
Andrea Stevens	SW	Deluxe	$34,321.00
Jonas Hathaway	SW	Moderate	$28,543.00
Maria Juarez	NE	Deluxe	$34,705.00
Jack Ward	SE	Value	$13,564.00
Greg Johnson	SW	Value	$15,739.00
Matthew Bowers	NW	Deluxe	$30,871.00
Peter Holbrook	SE	Moderate	$29,401.00
Holly Anderson	NE	Moderate	$20,883.00
Kristin Yates	NW	Deluxe	$38,486.00

2. Merge and center the first two lines so that the titles are centered horizontally over the information. Change the title rows to bold and make the heading 12 point size.

3. Change the column headings to italic. Increase the height of the headings row to 21.

4. Create a Pivot Table that shows the sum of total sales for each salesperson by product line with grand totals for each. The salespersons should be the row headings; the product lines should be the column headings.

5. Within the Pivot Table: Format "Salesperson" and "Grand Total" (in both cells where it appears) as boldfaced. Format "Product Line" as boldfaced and underlined. Indent the names of the salespersons. Format all cells containing numbers with a comma separator and 2 decimal places. Right-align the numbers and product lines. Make sure that all columns are wide enough to accommodate all information.

6. Create another Pivot Table to show total sales for each region by product line with grand totals for each. The regions should be the row headings; the product lines should be the column headings.

7. Format the Pivot Table the same as the previous one (see Step 5).

8. Create a bar chart for the sales by region Pivot Table. Show only the two northern regions. The title for the chart should be "Product Line Sales for Northern Region".

Print 1-A. Print the Pivot Table by salesperson
Print 1-B. Print the Pivot Table by region,
Print 1-C. Print the chart.

Job 2—Payroll Spreadsheet with Logical Formulas and Lookup Table

1. Input data for the payroll period for R & D Development as shown below:

R & D Development
Payroll for the Pay Period Ending January 31, 2007

	Income				Deductions				
Employee	Hourly Rate	Regular Hours	Overtime Hours	Gross Pay	Federal Tax	State Tax	Social Security	Medicare	Net Pay
Jordan Anderson	$15.75	40	5						
Carrie Braun	$16.00	38	0						
Darren Brody	$13.25	35	0						
Emma Gates	$13.00	20	0						
Ryan Lau	$15.00	40	8						
Mackenzie Phillips	$14.50	40	0						
Tate Rowley	$13.75	39	0						
Ethan Sommers	$15.00	40	3						

2. Use a formula to calculate gross pay. Overtime is paid at a rate of 1.5 times the regular rate.

3. Use an IF function to determine federal taxes. If gross pay is less than $417, the tax rate is 10% of gross pay. If gross pay is $417 or greater, the tax rate is $30.70 plus 15% of gross pay.

4. Input the following state tax table on Sheet 2 of the workbook. Fill the amounts in the left column as a trend to save time.

Income	*Tax Withheld*
$0.00	$0.00
$150.00	$0.40
$200.00	$1.80
$250.00	$4.10
$300.00	$6.40
$350.00	$8.70
$400.00	$11.00
$450.00	$13.40
$500.00	$16.20
$550.00	$19.60
$600.00	$23.10
$650.00	$26.50
$700.00	$29.90
$750.00	$33.40
$800.00	$36.90
$850.00	$40.50

5. Use a lookup function to determine state tax from the table on Sheet 2.

6. Use formulas to determine Social Security and Medicare taxes. Social Security is 6.2% of gross pay. Medicare is 1.45% of gross pay.

7. Format the title as 16 point and boldfaced. Format the subtitle and column headings as boldfaced. Format "Income" and "Deductions" as italic.

8. Format all numbers except Regular and Overtime Hours as currency with 2 decimal places.

9. Right-align column headings except "Employee".

10. Format "Regular Hours" and "Overtime Hours" as wrapped text.

11. Add borders around all cells except the title, subtitle, "Income", and "Deductions".

12. Change the orientation to landscape. Set up the spreadsheet to fit to one page.

Print 2-A. Print the payroll worksheet.
Print 2-B. Print the payroll worksheet displaying all formulas.

Job 3—Filters

1. Input data for Oak Lake High School fees as shown below:

Student Fees
Oak Lake High School

First Name	Last Name	Grade	Library	Business	English	Math	Science	Social Studies	Total
Allison	Bauer	11	$0.50	$5.00	$0.00	$0.00	$0.00	$0.00	$5.50
Michael	Johnson	10	$1.50	$0.00	$8.00	$0.00	$2.50	$0.00	$12.00
Randy	Kedrick	12	$2.50	$0.00	$0.00	$0.00	$2.50	$0.00	$5.00
Andrew	Dieter	9	$3.00	$0.00	$0.00	$0.00	$0.00	$0.00	$3.00
Bridget	Hansen	9	$0.00	$0.00	$8.00	$0.00	$2.50	$0.00	$10.50
Alyssa	Jones	12	$0.50	$5.00	$0.00	$0.00	$0.00	$0.00	$5.50
Tyler	Sanderson	10	$2.00	$5.00	$0.00	$0.00	$0.00	$0.00	$7.00
Sandra	Taylor	9	$1.00	$0.00	$0.00	$0.00	$2.50	$3.00	$6.50
Paige	Bushman	11	$1.50	$0.00	$0.00	$0.00	$2.50	$0.00	$4.00
Rachel	Warwick	11	$2.50	$0.00	$0.00	$0.00	$0.00	$0.00	$2.50
Neil	Staley	9	$1.00	$0.00	$0.00	$0.00	$2.50	$0.00	$3.50
Shawn	Kingsley	10	$0.50	$0.00	$0.00	$0.00	$2.50	$3.00	$6.00
Krystal	Dailey	12	$0.00	$5.00	$0.00	$0.00	$0.00	$3.00	$8.00
Austin	Gauley	10	$2.00	$0.00	$8.00	$0.00	$0.00	$0.00	$10.00

1. Merge and center the first two rows so the title and subtitle are centered over the information. Boldface the text in these rows. Format the title as 12 point size. Format the subtitle as italic.
2. Format the widths of the first three columns to fit the text. Format the width of the remaining columns as 8.2 pixels.
3. Format "Social Studies" as wrapped text.
4. Format all numbers except grade as currency with 2 decimal places.
5. Boldface all column headings. Italicize "Total".
6. Use a formula to calculate the total fees for each student.
7. Copy the worksheet to five other worksheets.
8. Rename the worksheets as follows:
   - Sheet 1: All Fees
   - Sheet 2: Grade 9
   - Sheet 3: Grade 10
   - Sheet 4: Grade 11
   - Sheet 5: Grade 12
   - Sheet 6: Library
9. Filter the Grade 9 worksheet to show only fees for Grade 9 in alphabetical order by last name.
10. Filter the Grade 10 worksheet to show only fees for Grade 10 in alphabetical order by last name.
11. Filter the Grade 11 worksheet to show only fees for Grade 11 in alphabetical order by last name.
12. Filter the Grade 12 worksheet to show only fees for Grade 12 in alphabetical order by last name.
13. Filter the Library worksheet to show only those students who have library fees. Sort those students by grade. Hide all columns to the right of "Library".

Print 3-A. Print the entire workbook.
Print 3-B. Print the "All Fees" sheet displaying all formulas.

Spreadsheet Applications Answer Key

1) B	11) A	21) C
2) B	12) C	22) B
3) A	13) D	23) A
4) C	14) C	24) A
5) C	15) B	25) C
6) B	16) B	26) A
7) B	17) D	27) A
8) B	18) A	28) D
9) B	19) C	29) D
10) A	20) D	30) D

Technology Concepts Answer Key

1) B	11) D	21) B
2) A	12) D	22) D
3) D	13) D	23) A
4) A	14) A	24) C
5) B	15) D	25) A
6) D	16) B	26) D
7) D	17) D	27) B
8) A	18) B	28) A
9) D	19) B	29) C
10) A	20) D	30) B

Word Processing I Answer Key

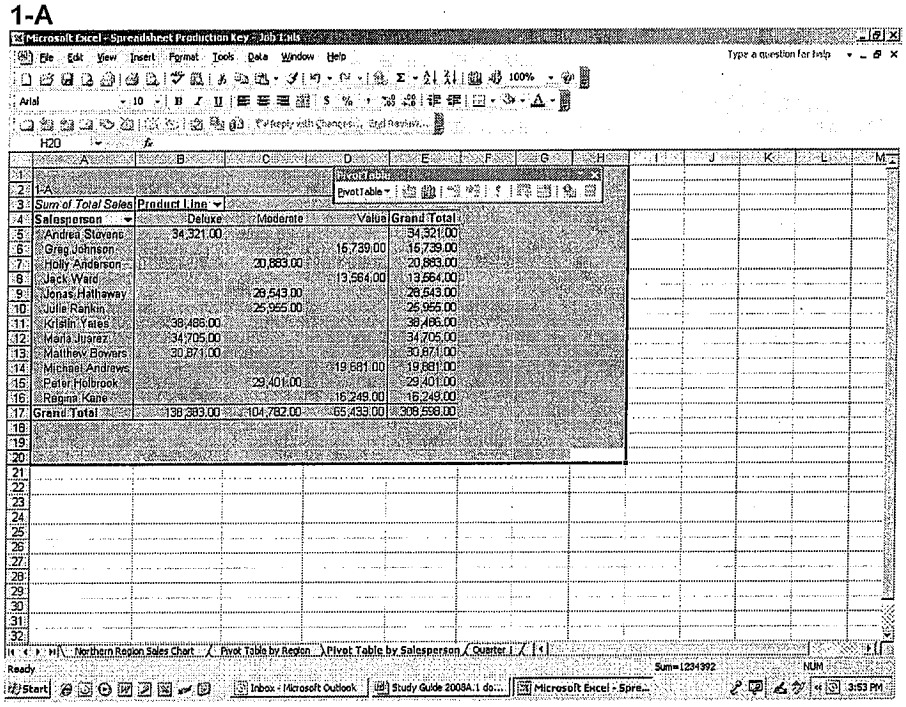
1) C	11) C	21) C
2) B	12) C	22) A
3) D	13) C	23) B
4) B	14) A	24) D
5) B	15) C	25) C
6) B	16) B	26) C
7) A	17) C	27) B
8) A	18) B	28) B
9) D	19) B	29) D
10) B	20) D	30) A

Word Processing II Answer Key

1) D	11) B	21) D
2) A	12) A	22) A
3) C	13) B	23) B
4) C	14) B	24) A
5) A	15) C	25) C
6) B	16) C	26) B
7) A	17) B	27) B
8) D	18) A	28) C
9) C	19) A	29) A
10) A	20) D	30) A

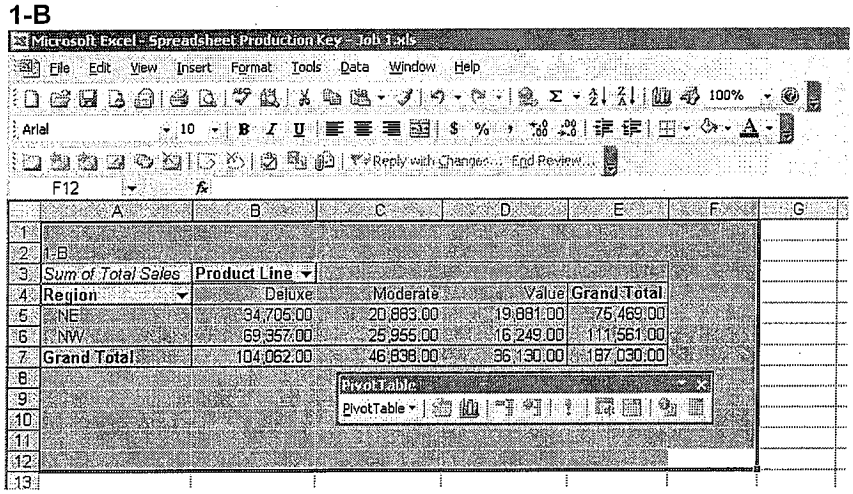
Spreadsheet AK—Job 1

1-A



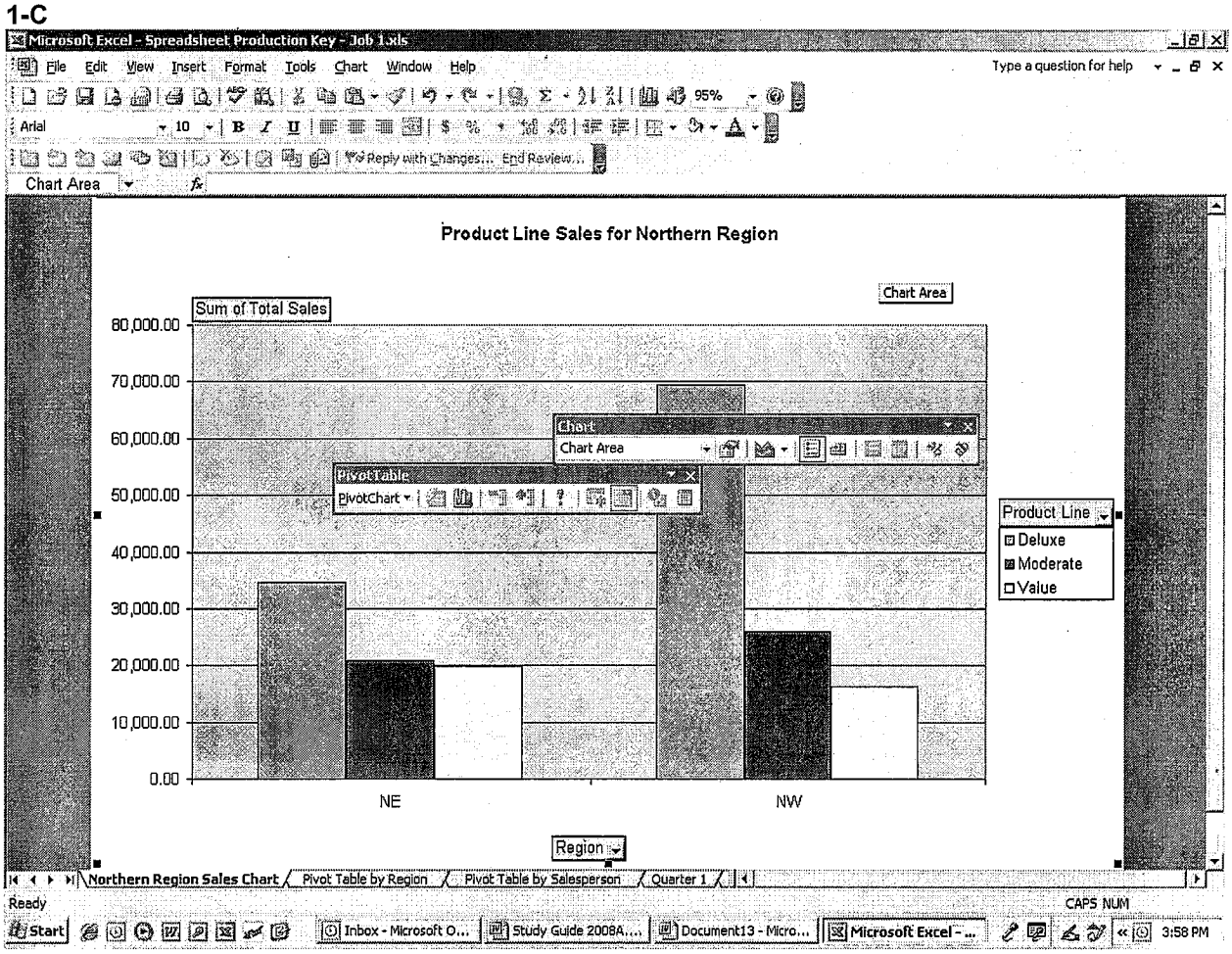
1-A					
Sum of Total Sales	Product Line				
Salesperson	Deluxe	Moderate	Value	Grand Total	
Andrea Stevens	34,321.00			34,321.00	
Greg Johnson			16,739.00	16,739.00	
Holly Anderson		20,883.00		20,883.00	
Jack Ward			13,564.00	13,564.00	
Jonas Hathaway		28,543.00		28,543.00	
Julie Rankin		25,955.00		25,955.00	
Kristin Yates	38,486.00			38,486.00	
Maria Juarez	34,705.00			34,705.00	
Matthew Bowers	30,871.00			30,871.00	
Michael Andrews			19,881.00	19,881.00	
Peter Holbrook		29,401.00		29,401.00	
Regina Kane			16,249.00	16,249.00	
Grand Total	138,383.00	104,782.00	65,433.00	308,598.00	

1-B

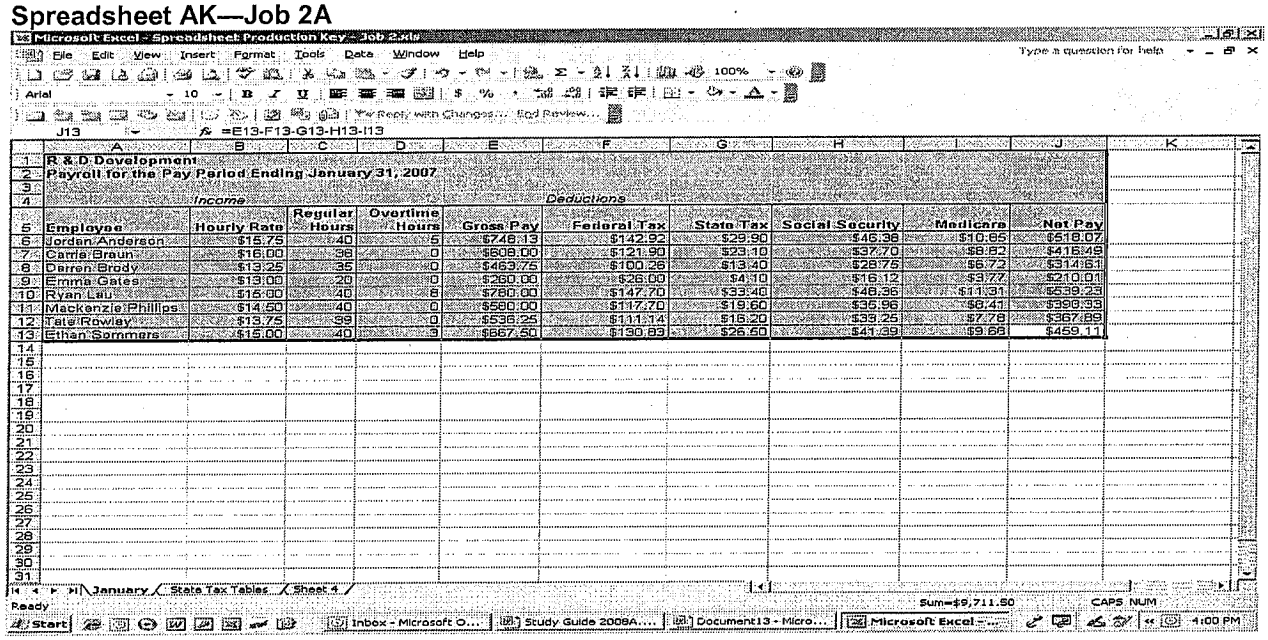


1-B				
Sum of Total Sales	Product Line			
Region	Deluxe	Moderate	Value	Grand Total
NE	34,705.00	20,883.00	19,881.00	75,469.00
NW	69,357.00	25,955.00	16,249.00	111,561.00
Grand Total	104,062.00	46,838.00	36,130.00	187,030.00

1-C


Microsoft Excel - Spreadsheet Production Key - Job 1.xls
File Edit View Insert Format Tools Chart Window Help
Type a question for help
Arial 10
Reply with Changes... End Review...
Chart Area
Product Line Sales for Northern Region
Chart Area
Sum of Total Sales
80,000.00
70,000.00
60,000.00
50,000.00
40,000.00
30,000.00
20,000.00
10,000.00
0.00
Chart
Chart Area
PivotTable
PivotChart
Product Line
Deluxe
Moderate
Value
NE
NW
Region
Northern Region Sales Chart
Pivot Table by Region
Pivot Table by Salesperson
Quarter 1
Ready
CAPS NUM
Start
Inbox - Microsoft O...
Study Guide 2008A....
Document13 - Micro...
Microsoft Excel -...
3:58 PM

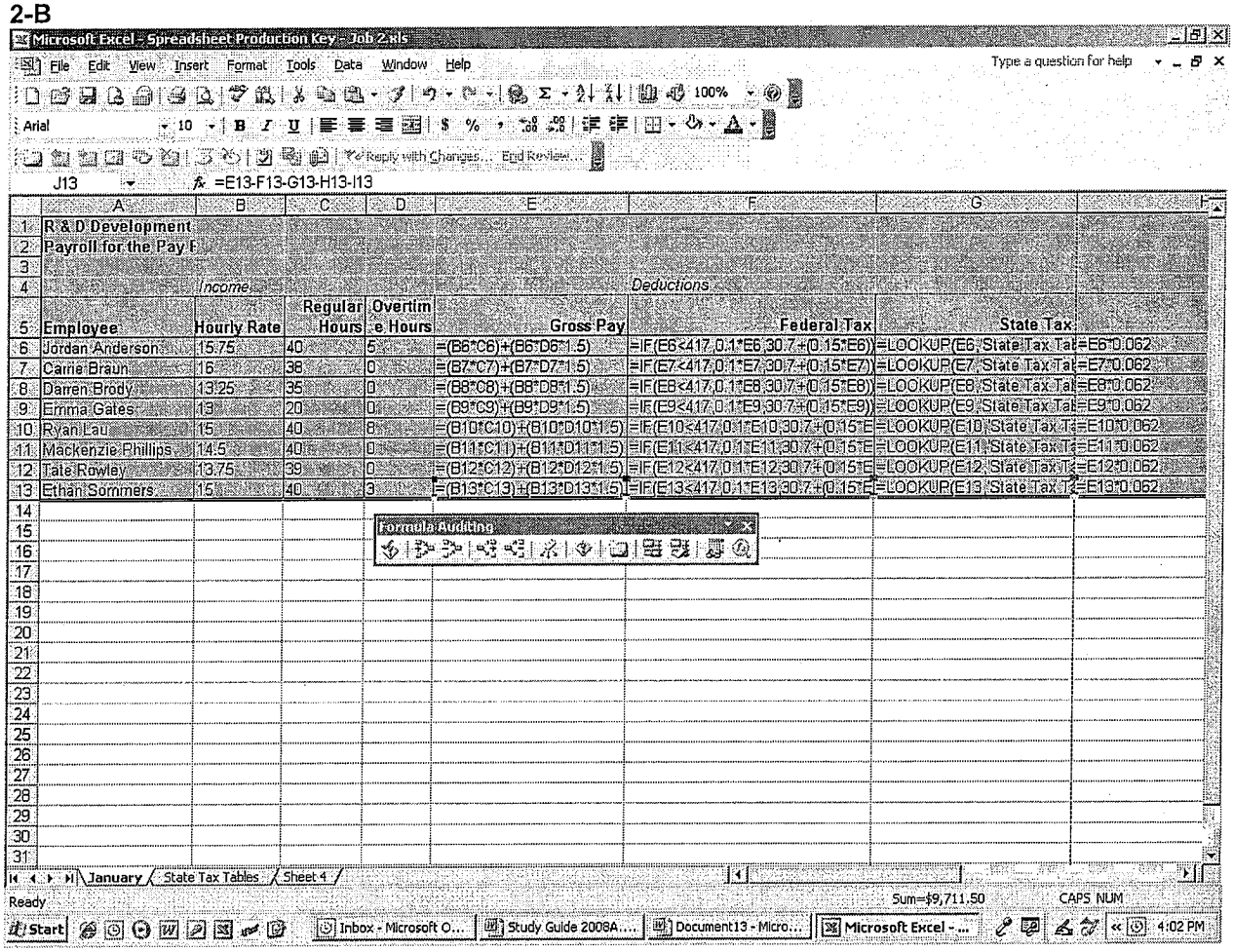
Spreadsheet AK—Job 2A



R & D Development
Payroll for the Pay Period Ending January 31, 2007

		Income			Deductions				
Employee	Hourly Rate	Regular Hours	Overtime Hours	Gross Pay	Federal Tax	State Tax	Social Security	Medicare	Net Pay
Jordan Anderson	$15.75	40	5	$748.13	$142.92	$29.90	$46.38	$10.85	$518.07
Carrie Braun	$16.00	38	0	$608.00	$121.90	$23.10	$37.70	$8.82	$416.49
Darren Brody	$13.25	35	0	$463.75	$100.26	$13.40	$28.75	$6.72	$314.61
Emma Gates	$13.00	20	0	$260.00	$26.00	$4.10	$16.12	$3.77	$210.01
Ryan Lau	$15.00	40	8	$780.00	$147.70	$33.40	$48.36	$11.31	$539.23
Mackenzie Phillips	$14.50	40	0	$580.00	$117.70	$19.60	$35.96	$8.41	$398.33
Tate Rowley	$13.75	39	0	$536.25	$111.14	$16.20	$33.25	$7.78	$367.89
Ethan Sommers	$15.00	40	3	$667.50	$130.89	$26.60	$41.39	$9.68	$459.11

2-B



R & D Development
Payroll for the Pay F

		Income			Deductions		
Employee	Hourly Rate	Regular Hours	Overtim e Hours	Gross Pay	Federal Tax	State Tax	
Jordan Anderson	15.75	40	5	=(B6*C6)+(B6*D6*1.5)	=IF(E6<417.0,1*E6,30.7+(0.15*E6))	=LOOKUP(E6,State Tax Tal	=E6*0.062
Carrie Braun	16	38	0	=(B7*C7)+(B7*D7*1.5)	=IF(E7<417.0,1*E7,30.7+(0.15*E7))	=LOOKUP(E7,State Tax Tal	=E7*0.062
Darren Brody	13.25	35	0	=(B8*C8)+(B8*D8*1.5)	=IF(E8<417.0,1*E8,30.7+(0.15*E8))	=LOOKUP(E8,State Tax Tal	=E8*0.062
Emma Gates	13	20	0	=(B9*C9)+(B9*D9*1.5)	=IF(E9<417.0,1*E9,30.7+(0.15*E9))	=LOOKUP(E9,State Tax Tal	=E9*0.062
Ryan Lau	15	40	8	=(B10*C10)+(B10*D10*1.5)	=IF(E10<417.0,1*E10,30.7+(0.15*E	=LOOKUP(E10,State Tax T	=E10*0.062
Mackenzie Phillips	14.5	40	0	=(B11*C11)+(B11*D11*1.5)	=IF(E11<417.0,1*E11,30.7+(0.15*E	=LOOKUP(E11,State Tax T	=E11*0.062
Tate Rowley	13.75	39	0	=(B12*C12)+(B12*D12*1.5)	=IF(E12<417.0,1*E12,30.7+(0.15*E	=LOOKUP(E12,State Tax T	=E12*0.062
Ethan Sommers	15	40	3	=(B13*C13)+(B13*D13*1.5)	=IF(E13<417.0,1*E13,30.7+(0.15*E	=LOOKUP(E13,State Tax T	=E13*0.062