

With the exception of a dictionary, the exam is closed book. The exam will require the use of a lab computer. Your solution must be printed on paper and turned in. The only computer applications allowed to be open and/or used during the exam are Microsoft Excel, and the off-line, Microsoft Excel help system. Students may NOT use the Internet. Cell phones must be turned off. Students may NOT leave the room (even to use the restroom or to use a cell phone) during the exam until that student has turned in the exam. Failure to turn in an exam before leaving the classroom will result in a zero. Time limit: 50 minutes.

**The final printed layout must look similar to the guide page given at the end of this document: everything must fit on a single page, grid marks should appear only where they are shown in the guide. The rows and columns do not need to be the exact sizes shown, but must be sized so that all the information in each cell fits in the cell.**

- a) **[2 points]** Use Microsoft Excel to format an 8.5x11 inch page with portrait orientation. Set the margins to **1.5 inches** on the **top & bottom**, and **0.25 inches** on the **left & right**.
- b) **[4 points]** In **row 1**, enter your **first and last names** where it says “Your Name Here” in the guide. Your name must be in **20 point Arial** font and centered across cells A1:E1.
- c) **[1 point]** In **row 2**, enter the column titles “**Name**”, “**Lab 1**”, “**Lab 2**”, “**Midterm Exam**”, and “**Final Grade**” in columns **A** through **E** using **12 point Arial font**.
- d) **[2 points]** **Horizontally center** the text in cells **A2:E2** and **wrap** the text in cells **D2** and **E2**.
- e) **[2 points]** In rows 3 through 6, enter the names, lab grades, and midterm grades as shown in the page guide.
- f) **[1 point]** In cell A8, enter the text: “**Average**”.
- g) **[1 point]** In cells **A10:B11**, enter the text and numbers shown in the guide.
- h) **[1 point]** Enter “**Equation for Lab 1 Average:**” in cell **A13**.
- i) **[1 point]** Enter “**Equation for Ori's Final Grade:**” in cell **A16**.
- j) **[5 points]** **Adjust the width** of columns A through E so that the text is displayed as shown in the guide.
- k) **[5 points]** Fill cells **A2:E2**, and cells **A10:B11** with gray.
- l) **[5 points]** Add **single-line**, black cell **borders** around cells **A1:E8** and **A10:B11**.
- m) **[5 points]** Add **double-line**, black cell **borders** along the bottom of cells **A2:E2** and along both sides of **E2:E8**.

	A	B	C	D	E
1	Your Name Here				
2	Name	Lab 1	Lab 2	Midterm Exam	Final Grade
3	Ori	100%	95%	91%	<b>94%</b>
4	Oin	78%	77%	85%	<b>81%</b>
5	Bofur	63%	44%	90%	<b>72%</b>
6	Thorin Oakenshield	99%	100%	50%	<b>75%</b>
7					
8	<b>Average</b>	<b>85%</b>	<b>79%</b>	<b>79%</b>	<b>81%</b>
9					
10	Each Lab Weight:	10			
11	Midterm Weight:	20			

- n) **[12 points]** In cell **B8**, enter an Excel equation that calculates the average of all the grades for lab 1. This equation must be entered so that it can be filled right to correctly calculate the average grades in **C8:E8**. The equation **MUST NOT use any constants**. Copy the equation into cell **A14** and remove the '=' sign so that the equation appears as text. Then merge cells **A18:F18**.
- o) **[12 points]** In cell **E3**, enter an Excel equation calculating Ori's final grade by applying the appropriate weight to each of his lab grades and his midterm grade. This equation must be entered so that it can be filled down to correctly calculate the grades in **E4:E6**. **The equation MUST NOT use any constants**. All values must be obtained by cell references. Copy the equation into cell **A17** and remove the '=' sign so that the equation appears as text. Then merge cells **A17:F17**.
- p) **[2 points]** All text in **rows 2 through 18** must be in 12 point, Arial.
- q) **[2 points]** The text in rows **8, 14, and 17**, and in cells **E3:E8** must be **bold**.
- r) **[2 points]** Format cells **B3:E8** as percentages with no decimal places.
- s) **[6 points]** Create a **3-dimensional clustered column chart** with a cluster for each student's name and a column in each cluster for the grades of Lab 1, Lab2, and the midterm as shown in the guide. The chart's width must extend from near the left page margin to near the right page margin as shown in the guide.
- t) **[5 points]** The **legend** must include the three labs and the Midterm. The legend must appear at the **bottom** of the chart and **extend beyond the ends of the chart** as shown in the guide.
- u) **[3 points]** The **horizontal axis labels** must be labeled with the student names as shown in the guide.
- v) **[6 points]** The vertical axis labels must start at **40%**, end at **100%** and be in **5% intervals**.
- w) **[3 points]** The **horizontal and vertical axis labels** must be in 10 point Arial.
- x) **[3 points]** The **legend** must be in 14 point Arial.
- y) **[6 points]** In the chart, each column must be **filled** with a **black foreground**, a **white background** and the **patterns** shown in the guide (solid black, a brick pattern and a 45 degree strip pattern).
- z) **[3 points]** The chart's **title** must be "**CS-150 Grades**" in 14 point Arial.

## Your Name Here

Name	Lab 1	Lab 2	Midterm Exam	Final Grade
Ori	100%	95%	91%	<b>94%</b>
Oin	78%	77%	85%	<b>81%</b>
Bofur	63%	44%	90%	<b>72%</b>
Thorin Oakenshield	99%	100%	50%	<b>75%</b>
<b>Average</b>	<b>85%</b>	<b>79%</b>	<b>79%</b>	<b>81%</b>

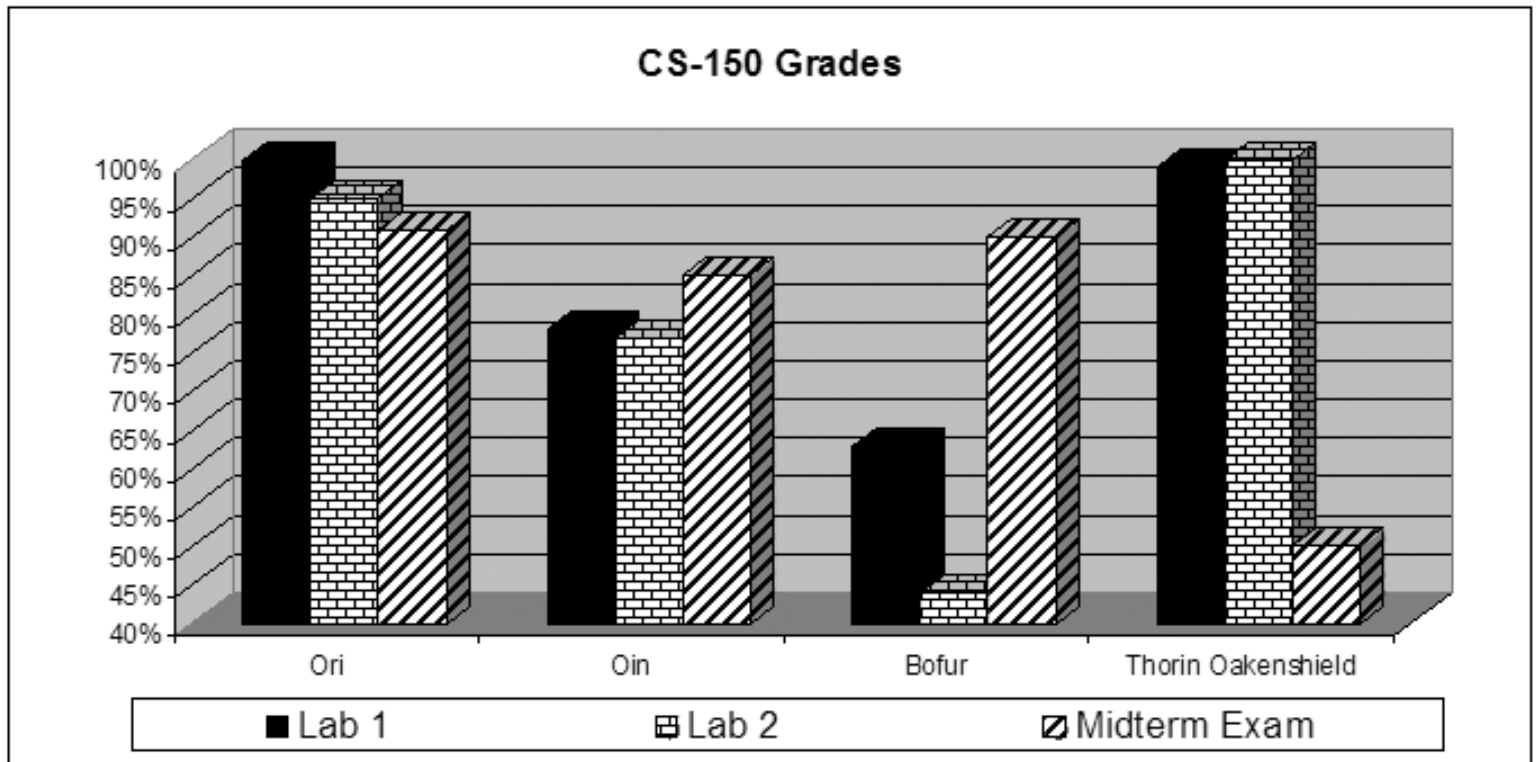
Each Lab Weight:	10
Midterm Weight:	20

Equation for Lab 1 Average:

**[Enter Equation as text for Lab 1 average from cell B8]**

Equation for Ori's Final Grade:

**[Enter Equation as text for Ori's average from cell E3]**



## Solution Guide:

The formatting does not need to be an exact copy of the output guide page, but it must adhere all of the instructions given in tasks (a) through (z).

The following are some common mistakes with tasks a through m:

Mistake #1: Column A is too narrow to show the name in cell A6.

Mistake #2: Column D is too wide for the text to wrap.

Mistake #3: Row 2 is too short to show the two lines of wrapped text in cell E2.

Mistake #4: Column E is formatted to show one decimal place.

Mistake #5: Part of the left border of Column E only has a single line border.

Mistake #6: There is no border around cells A8:C8. The faint gray lines are only Excel guide lines and will not print.

Mistake #7: There are border lines around cells F2:F5.

	A	B	C	D	E	F	G
1	Your Name Here						
2	Name	Lab 1	Lab 2	Midterm Exam	Final		
3	Ori	100%	95%	91%	94.3%		
4	Oin	78%	77%	85%	81.3%		
5	Bofur	63%	44%	90%	71.8%		
6	Thorin Oak	99%	100%	50%	74.8%		
7							
8	<b>Average</b>	<b>85%</b>	<b>79%</b>	<b>79%</b>	<b>80.5%</b>		

n) There are many possible correct answers for the equation calculating the average of all the grades for lab 1. Any **one** of the following receives full marks

=AVERAGE(B3:B6)

=AVERAGE(B3,B4,B5,B6)

=SUM(B3:B6)/COUNT(B3:B6)

=SUM(B3:B6)/COUNTA(B3:B6)

=(B3+B4+B5+B6)/COUNT(B3:B6)

The following are some common mistakes with this equation:

Mistake #1: =SUM(B3:B6)/4

This will give the correct answer, but it uses the constant 4. Sometimes it is ok to use constants in equations, but the instructions specify that no constants are to be used in this equation.

**Mistake #2: =AVERAGE(\$B\$3:\$B\$6)**

This will give the correct answer in cell, B8, but will give incorrect answers when filled across through E8.

**Mistake #3: =AVERAGE(B3+B4+B5+B6)**

This will give the incorrect answer of 340% in cell B8 because first it finds sum of the 4 grades. Then the average of that single number is calculated. The average of any single number is just the number itself.

**Mistake #4: =85%**

This is the correct answer for B8, but it will not give the correct answer when filled across. Additionally, it is a constant. Constants are not allowed in this equation.

- o) There are many possible correct answers for the equation calculating Ori's final grade. One possible correct answer is:

$$=(B3*\$B\$10+C3*\$B\$10+D3*\$B\$11)/(\$B\$10+\$B\$10+\$B\$11)$$

The following are some common mistakes with this equation:

**Mistake #1: =AVERAGE(B3:D3)**

This is incorrect because the Excel average() function will give equal weight to B3, C3, and D3.

**Mistake #2: =(B3\*B10+C3\*B10+D3\*B11)/(B10+B10+B11)**

This will give the correct answer in E3, but will not give the correct answer when filled down through E6.

**Mistake #3: =(B3\*\\$B\\$10+C3\*\\$B\\$10+D3\*\\$B\\$11)**

This is incorrect because the weighted sum is not divided by the total weight.

**Mistake #4: =(B3\*\\$B\\$10+C3\*\\$B\\$10+D3\*\\$B\\$11)/40**

This gives the correct answer, but it uses the constant 40. The instructions specify that no constants are to be used in this equation.