9. In cell G8, calculate the range of scores for the first exam, which is equal to the difference between the maximum and minimum score.
10. Repeat Steps 6 through 9 for each of the other two exams, the final exam, and the overall weighted score.
11. Use conditional formatting to highlight the top 10 scores in the range F17:F52 in a light red fill with dark red text.
12. Insert a page break at cell A14, repeat the first three rows of the worksheet in any printout, and verify that the worksheet is in portrait orientation.
13. Save and close the workbook, and then submit the finished workbook to your instructor, either in printed or electronic form, as requested.

Use formulas and functions to create an order form for a fireworks company.

APPLY

Case Problem 2

Data File needed for this Case Problem: Wizard.xlsx

WizardWorks Andrew Howe owns and operates WizardWorks, an online seller of fireworks based in Franklin, Tennessee. Andrew wants you to help him develop an order form for his business. The form needs to contain formulas to calculate the charge for each order. The total charge is based on the quantity and type of items ordered plus the shipping charge and the 5 percent sales tax. Orders can be shipped using standard 3- to 5-day shipping for $3.99 or overnight for $10.99. Andrew is also offering a 4 percent discount for orders that exceed $200. Both the shipping option and the discount need to be calculated using formulas based on values entered into the worksheet. Complete the following:

1. Open the **Wizard** workbook located in the Excel3\Case2 folder included with your Data Files, and then save the workbook as **WizardWorks Order Form**.
2. In the Documentation sheet, enter your name in cell B3 and enter the date in cell B4.
3. In the Order Form worksheet, in cell C4, enter the customer name, **Kevin Kemper**. In cell C6, enter the order number, **28314**. In the range C9:C13, enter the following address:

   Address 1: **315 Avalon Street**
   City: **Greenfield**
   State: **IN**
   Zip: **46140**
4. In cell C5, enter a function that displays the current date.
5. In the range B20:E22, enter the following orders:

Item	Name	Price	Qty
BF001	**Bucket of Fireworks**	**$45.75**	**1**
NAF	**Nightair Fountain**	**$12.95**	**4**
MR20B	**Mountain Rockets (Box 20)**	**$55.25**	**2**

6. In cell C15, enter **overnight** to ship this order overnight.

EXPLORE

7. In cell F20, enter an IF function that tests whether the order quantity in cell E20 is greater than 0 (zero). If it is, return the value of cell E20 multiplied by cell D20; otherwise, return no text by entering **""**. AutoFill this formula into the range F21:F25.
8. In cell F27, calculate the sum of the values in the range F20:F25.
9. In cell F28, enter an IF function that tests whether cell F27 is greater than 200. If it is, return the value of cell F27 multiplied by the discount percentage in cell F12; otherwise, return the value 0 (zero).
10. In cell F29, subtract the discount value in cell F28 from the subtotal value in cell F27.
11. In cell F31, calculate the sales tax by multiplying the after discount value in cell F29 by the sales tax percentage, 0.05.

EXPLORE 12. In cell F32, determine the shipping charge by entering an IF function that tests whether cell C15 equals "standard". If it does, return the value in cell F9; otherwise, return the value in cell F10.

13. In cell G32, display the value of cell C15.
14. In cell F34, calculate the total of the after discount value, the sales tax, and the shipping fee.
15. Reduce the quantity of Mountain Rockets boxes from 2 to **1**, and then verify that the discount is changed to 0 for the order.
16. Change the shipping option from overnight to **standard**, and then verify that the shipping fee is changed to the fee for standard shipping.
17. Save and close the workbook, and then submit the finished workbook to your instructor, either in printed or electronic form, as requested.

Explore how to use relative and absolute references and the PMT function to create a loan table.

CHALLENGE

Case Problem 3

Data File needed for this Case Problem: Loan.xlsx

Eason Financial Services Jesse Buchmann is a finance officer at Eason Financial Services in Meridian, Idaho. She works with people who are looking for home mortgages. Most clients want mortgages they can afford, and affordability is determined by the size of the monthly payment. The monthly payment is determined by the interest rate, the total number of payments, and the size of the home loan. Jesse can't change the interest rate, but homebuyers can reduce their monthly payments by increasing the number of years to repay the loan. Jesse wants to give her clients a grid that displays combinations of loan amounts and payment periods so that they can select a loan that best meets their needs and budget. Jesse already entered much of the layout and formatting for the worksheet containing the loan payment grid. You will enter the PMT function. Complete the following:

1. Open the **Loan** workbook located in the Excel3\Case3 folder included with your Data Files, and then save the workbook as **Loan Grid**.
2. In the Documentation sheet, enter your name and the date.
3. In the Loan Calculation worksheet, in cell E3, enter a monthly payment of **$1,750**.
4. In cell E5, enter the annual interest rate of **5.75%**. In cell E6, enter **12** to indicate that the interest payment is compounded 12 times a year, or monthly.
5. In the range C10:C20, use AutoFill to enter the currency values **$250,000** through **$350,000** in increments of $10,000. In the range D9:H9, use AutoFill to enter the year values **15** through **35** in increments of 5 years.

EXPLORE 6. In cell D10, use the PMT function to calculate the monthly payment required to repay a **$250,000** loan in **15** years at **5.75%** interest compounded monthly. Use absolute references to cells E5 and E6 to enter the annual interest rate and number of payments per year. Use the mixed references D$9 and $C10 to cells D9 and C10, respectively, to reference the number of years to repay the loan and the loan amount. Place a minus sign before the PMT function so that the value returned by the function is positive rather than negative.

EXPLORE 7. Using AutoFill, copy the formula in cell D10 into the range E10:H10, and then copy that range of formulas into the range D11:H20.

EXPLORE 8. Conditionally format the range D10:H20 to highlight all of the values in the range that are less than the value in cell E3 in a dark green font on a green fill.

9. Add a second conditional format to the range D10:H20 to highlight all of the values in the range that are greater than the value in cell E3 in a dark red font on a red fill.