

### Solution to First Quiz, February 2, 2017

All parts of the first two questions apply to the spreadsheet shown at the right. Each question assumes that you are starting fresh with no results from the answers to previous questions.

	A	B	C	D	E	F	G
1	1	2	3				
2	2	0	1				
3					2	5	1
4					0	1	3
5							

1. Answer each part below.

a. What value would appear in cell D1 if the formula =A1 \* B1 - C1 were entered into that cell? 1 \* 2 - 3 = -1.

b. What value would appear in cell G4 if the formula written in cell D1 for part 1a were copied to cell G4? 0 \* 1 - 3 = -3.

c. Write a formula for cell A5 that you could copy to cells B5:G5 so that row 5 contains the sum of all columns from A to G. =A1 + A2 + A3 + A4 or SUM(A1:A4).

d. If the formula =A1 + D3 is entered in cell A4 and copied to all cells in the range A4:C5, what is the value of each cell in this range? Use the grid at the right for your answers.

1 + 2 = 3	2 + 5 = 7	3 + 1 = 4
2 + 0 = 2	0 + 1 = 1	1 + 3 = 4

2. What are the values in cells D5, E5, and F5 if the following formulas are entered in cell D5 and copied to cells E5 and F5?

a. =A1\*(D3 - E4)      1 \* (2 - 1) = 1    2 \* (5 - 3) = 4    3 \* (1 - 0) = 3

b. =\$A\$1\*(D3 - E4)      1 \* (2 - 1) = 1    1 \* (5 - 3) = 2    1 \* (1 - 0) = 1

c. =\$A1\*(D3 - E4)      1 \* (2 - 1) = 1    1 \* (5 - 3) = 2    1 \* (1 - 0) = 1

d. =A\$1\*(D3 - E4)      1 \* (2 - 1) = 1    2 \* (5 - 3) = 4    3 \* (1 - 0) = 3

3. The formula for the position,  $s$ , of an object, with a constant acceleration,  $a$ , as a function of time,  $t$ , is given by the equation  $s = s_0 + v_0(t - t_0) + a(t - t_0)^2/2$ . In this equation,  $v_0$  is the initial velocity,  $s_0$  is the initial position, and  $t_0$  is the initial time. Assume that you have been given a spreadsheet where the entries for  $t_0$ ,  $s_0$ ,  $v_0$ , and  $a$  are in cells A2, B2, C2, and D2, respectively. Describe the steps you would use to create a table of the position,  $s$ , as a function of time,  $t$ , for all times from  $t_0$  to  $t_0 + 10$ s with a time step of 0.1s. Design your spreadsheet so that all time results are under the initial time value in cell A2 and all position results are under the initial position value in cell B2.

a. Enter the formula = A2 + 0.1 in cell A3.

b. Enter the formula =B2 + \$C\$2\*(A3 - \$A\$2) + \$D\$2\*(A3 - \$A\$2)^2/2 in cell B3

c. Copy the formula in cell A3 into cells A4:A102

d. Copy the formula in cell B3 to cells B4:B102