

Directions:

- Complete the exercises below and either write up or type up your solutions. Solutions must be submitted as PDF or Word documents, uploaded to the appropriate assignment area on Blackboard.
 - If you choose to submit handwritten work, it must be neat and legible; if you do your handwritten work on paper, it must be **scanned to a PDF file** and submitted to Blackboard. Instructions and practice for scanning work to PDFs is given in the Startup Assignment. **Do not just take a picture, and do not submit a graphics file (JPG, PNG, etc.)** — such submissions will not be graded.
 - Work that would receive a grade of “M” on the EMRN rubric will be given 10 engagement credits, and work that would ordinarily receive a grade of “R” will be given 5 engagement credits. No revisions will be allowed, but a key will be posted after the deadline passes.
 - Every item must have a good-faith effort at a complete and correct response. If any item is left blank, or shows minimal effort (such as answering “I don’t know”), or is significantly incomplete, the entire assignment will be graded at 0 engagement credits.
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1. In an attempt to clean up your room, you have purchased a new floating shelf to put some of your 17 books you have stacked in a corner. These books are all by different authors. The new book shelf is large enough to hold 10 of the books.
 - (a) How many ways can you select and arrange 10 of the 17 books on the shelf? Notice that here we will allow the books to end up in any order. Explain.
 - (b) How many ways can you arrange 10 of the 17 books on the shelf if you insist they must be arranged alphabetically by author? Explain.
2. The US Electoral College consists of 538 electors who, collectively, decide the outcome of the US Presidential election. (See: https://en.wikipedia.org/wiki/United_States_Electoral_College Winning the election requires 270 electoral votes. How many ways are there to select 270 electors from the entire Electoral College? Make your reasoning clear.