**2018 May Day MCM**

**Problem C: A Comprehensive Evaluation of the** [**Undergraduate Education**](http://link.springer.com/10.1007/978-94-007-5836-0_2) **Quality in Jiangsu**

With the reform and opening up of China, the comprehensive strength of the country has been continuously enhanced, and the overall development of advanced education has entered the world level. As an education power of China, the undergraduate education of Jiangsu province has come out top of the country, but the education quality in its 13 prefecture-level cities still remain imbalanced.

1. The [undergraduate education](http://link.springer.com/10.1007/978-94-007-5836-0_2) quality may differ greatly because of a variety of indicators such as number of undergraduate colleges, enrollment numbers, structure of teaching staffs, student–faculty ratio, teaching conditions and uses, development of specialties and teaching reform, student employment, input and output of scientific research, double first class disciplines. Make a quantitative data analysis on the above 9 indicators, and fill in the form below.

2. Based on your data analysis in 1, what are your comprehensive valuation of the [undergraduate education](http://link.springer.com/10.1007/978-94-007-5836-0_2) quality of the 13 prefecture-level cities, which are Changzhou, Huaian, Lianyungang, Nanjing, Nantong, Suqian, Suzhou, Taizhou, Wuxi, Xuzhou, Yancheng, Yangzhou, Zhenjiang, in Jiangsu province?

3. Which ones of the 9 indicators given above can be removed, keeping the results in 2 unchanged?

4. By developing a mathematical model, determine a key indicator such that the general betterment of whose value can narrow the gap in [undergraduate education](http://link.springer.com/10.1007/978-94-007-5836-0_2) quality between the 13 prefecture-level cities in Jiangsu. Validate the effectiveness of the mathematical model by using the data you collected.

5. Offer a set of policy recommendations to effectively promote the [undergraduate education](http://link.springer.com/10.1007/978-94-007-5836-0_2) quality in Jiangsu from the discussion above.

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| **No.** | **Indicator** | **Treatment** | **Foundations** | **Remark** |
| 1 | Number of undergraduate colleges |  |  |  |
| 2 | Enrollment numbers |  |  |  |
| 3 | Structure of teaching staffs |  |  |  |
| 4 | Student–faculty ratio |  |  |  |
| 5 | Teaching conditions & uses |  |  |  |
| 6 | Development of specialties & teaching reform |  |  |  |
| 7 | Student employment |  |  |  |
| 8 | Input and output of scientific research |  |  |  |
| 9 | Double first class disciplines |  |  |  |