**Level 5 Yr 1 research methods exam practice**

A psychologist was investigating the difference between a person’s concentration levels before and after exercise. Previous research had been inconclusive with some research showing an effect whilst others no effect. 24 participants were gathered by the researcher. They gathered the sample from a local office block where they found that the majority of workers were male and so to represent this in the sample gathered selected 18 men and 8 women from a list of all workers in the building using a random number generator. Participants were then timed completing a concentration test before being made to do a 30 minute run and then were timed completing the same concentration test after a 30 minute run. The findings of the research are shown in table one.

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|  **Table one** |
| Participant | Before exercise (seconds) | After exercise (seconds) |
| 1 | 36 | 36 |
| 2 | 22 | 11 |
| 3 | 23 | 23 |
| 4 | 45 | 35 |
| 5 | 22 | 22 |
| 6 | 21 | 21 |
| 7 | 34 | 33 |
| 8 | 51 | 51 |
| 9 | 35 | 36 |
| 10 | 55 | 57 |
| 11 | 11 | 11 |
| 12 | 33 | 30 |
| 13 | 42 | 42 |
| 14 | 34 | 36 |
| 15 | 66 | 66 |
| 16 | 22 | 25 |
| 17 | 25 | 31 |
| 18 | 45 | 45 |
| 19 | 41 | 41 |
| 20 | 44 | 48 |
| 21 | 22 | 22 |
| 22 | 55 | 55 |
| 23 | 33 | 33 |
| 24 | 25 | 26 |

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|  **Table two** |
| **Table of critical values of the sign test (S)**Calculated value of S must be ≤than the critical value to be significant.  |
| **Level of significance for a one tailed test** |
|  | **.05** | **.025** | **.01** | **.005** |
| **Level of significance for a two-tailed test** |
|  | **.10** | **.05** | **.02** | **.01** |
| **N** |  |  |  |  |
| **5** | **0** |  |  |  |
| **6** | **0** | **0** |  |  |
| **7** | **0** | **0** | **0** |  |
| **8** | **1** | **0** | **0** | **0** |
| **9** | **1** | **1** | **0** | **0** |
| **10** | **1** | **1** | **0** | **0** |
| **11** | **2** | **1** | **1** | **0** |

1. Write an appropriate and fully operationalised hypothesis (3 marks)
2. What type of sampling did the researchers use? (1 mark)
3. Outline one disadvantage of using this type of sampling in this piece of research (2 marks)
4. What was the percentage of men that were used in the sample? Show all of your workings (2 marks)
5. Identify the experimental design used in the piece of research? (1 mark)
6. Outline one advantage of the type of experimental design that you gave as an answer to question 5 (2 marks)
7. Using table one, what is the calculated value for the data above? Show your workings (2 marks)
8. Using the critical value table (table two) were the findings significant? **Fully justify your answer** (4 marks)
9. The researcher attempted to put many controls in place during the research. Identify one element of the research that was **not** controlled however and state what could be done to improve on this issue. (1+ 2 marks)

Another researcher and her 3 assistants (also investigating concentration levels) decided to do an observation in the same office block. They each used the CCTV of one floor of the building, without the participants knowing, and made their observations every 15 minutes through one eight hour working day. Before the observation began the researcher trained her assistants and then carried out a pilot study.

1. What type of observation did the researcher carry out? (3 marks)
2. What type of sampling was used? (1 mark)
3. How many total observations should each researcher have made? Show all of your workings (2 marks)
4. Identify one way the researcher ensured the reliability **AND** the validity of the research (1+1 marks)
5. What would be the most appropriate measure of central tendency to use with this data? Justify your answer (2 mark)

Your mini mock will only be out of 24 marks. There are only 30 marks here to give you more practice

Total - /30 marks

Now mark **AND** correct your answers. Very similar styles of questions will be asked in your mini mock so it is a total waste of time to just answer and not mark and correct. You aren’t level 5 ing at all!!