A researcher wants to know the effects of a drug on student academic performance. She gives various doses of the drug to different groups of students. To one group, she gives them a “fake” pill called a placebo. The students are unaware of which dose or kind of pill they receive. After a nine-week session of school, she examines the average math scores of each group of students and records the following data:

<table>
<thead>
<tr>
<th>Dose</th>
<th>0 mg (placebo)</th>
<th>10 mg</th>
<th>15 mg</th>
<th>20 mg</th>
<th>25 mg</th>
<th>30 mg</th>
<th>35 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avg. Score (%)</td>
<td>73</td>
<td>74</td>
<td>75</td>
<td>77</td>
<td>78</td>
<td>78</td>
<td>76</td>
</tr>
</tbody>
</table>

14. ___________________ The control  
15. ___________________ The independent variable 
16. ___________________ The dependent variable  
17. ___________________ Kind of Graph 
18. ___________________ ___________________ Justify answer to #17 
19-21. ___________________ ___________________ Three possible constants
A clinical psychologist hypothesizes that listening to an inspirational tape will lead one to be in a better mood. To test this, she has 50 people listen to an hour-long inspirational tape. Another 50 listen to white noise for an hour. She then has them rate their mood on a 10-point scale.

22. _______________________________ The mood of the test subjects is a/an ____.
23. _______________________________ The length of time a tape is listened to is a/an ____.
24. _______________________________ The type of data reported is ____ data.
25. _______________________________ The type of tape the people listened to is a/an ____.

Suzie Q wants to know the effect of different colors of light on the growth of plants. She believes that plants can survive best in white light. She buys 5 ferns of the same species, which are all approximately the same age and height. She places one in natural white light, one in blue light, one in green light, one in red light and one in the closet. All of the ferns are planted in Miracle-Grow soil and given 20 mL of water once a day for 2 weeks. After the two weeks, Suzie measures the plants’ heights.

26 & 27. __________________________ ______________________________ Control groups
28. ______________________________ Experimental groups
29.-31 ______________________________ ______________________________
_____________________________ Constants
32. ______________________________ Dependent Variable
33. ______________________________ Independent Variable

A student observed that wrapping thin, insulated wire several times around a nail and attaching the leads to a battery made the nail magnetic. The student hypothesized that increasing the number of wrappings around the nail increases the magnetic strength of the electromagnet. He devised an experiment to test the effects of the number of wrappings on the number of paperclips the nail can pick up. For comparison, he removed the battery from his electromagnet and observed that it did not pick up any paperclips. He also tested a permanent magnet to see if it could pick up paperclips.

34. ___________________________ Dependent variable
35. _______________________________ Independent variable
36. _______________________________ Constant (give one valid example)
37. _______________________________ Control group example
38. _______________________________ Control group example

Draw a data graph below that would support the student’s hypothesis, following these guidelines:
39. Correct variables on correct axes  40. Axes labeled with type of measurement
41. Axes labeled w/unit of measurement, if applicable  42. Scale on axes  43. Correct type of graph
44. Graph supports hypothesis

Bonus: If none of the electromagnets picked up any paperclips, which of the controls becomes important? Why?

________________________________________
________________________________________
________________________________________