GRADE 12 ESSENTIAL
PRACTICE QUIZ
PROBLEM SOLVING &
STATISTICS

Show work for Full Marks! Use your study notes (cheat sheet).
    Read the question. Make sure you answered the question.
Make a clear statement of your answer! Box it, words are nice too!
    Round all decimal answers to nearest hundredth (0.01) or as indicated. Round all
    percentages to the nearest whole percent.

1.   Calculate the mean, median, mode, and range of the following sets of data to the nearest
tenth (0.1)

a.   {4, 7, 2, 2, 14}   b.   {6.3, 8.2, 7.5, 4.1, 11.6, 10.3}

2.   Todd has the following marks (out of 10) on assignments:

        6.5, 8.5, 8.4, 7.8, 10, 8.4, 3.5

The teacher calculates the mean score by trimming off one lowest score only (since everyone
has a bad day). What is Todd's trimmed mean score if the lowest score is trimmed off?

3.   If Kirk gets a 75% mean on his entire math course his mom will take him to Fun
Mountain! Presently Kirk has test marks of 65%; 80%, 90%, and 55% and there is one more
test remaining. All the test marks on the course are equally weighted. What mark does Kirk
need on his final (fifth) test to get to Fun Mountain?

4.   In Jody's English course there are five tests and a final exam. For course assessment the final exam has a **weight factor** of twice that of the tests.   On her tests Jody got [%]: 70, 67, 70, 75, and 80. On her final exam she only got a 52.

      a.   what is Jody's mark for the course using the assessment weightings?

      b.   what was Jodie's mean mark before the exam?

5.   **Problem Solving – Make a List**. You are ordering pizza with a friend. There is a special on three-topping pizzas. You decide to get a three topping pizza. But you have five favourite toppings! Your favourite toppings are Bacon, Tomato, Mushroom, Green Pepper, and Ham; but you are only allowed to choose three of those toppings. (and all three have to be different)

      a.   List all the possible three topping pizzas;

      b.   How many different three topping pizzas can you order?

6.   **Problem Solving (Use a Table – Guess and Check – Work Backwards – Use a Formula)**. Two hot dogs and a coke cost $4.00. A coke is 50 cents less than a hot dog. How much is a coke? How much is a hot dog?

7.   **Problem Solving (Guess and Check, Work Backwards, Use Logic)**. Five years ago my mom was twice as old as me.   I am 24 now. How old is my mom now?

8.   Here are the ages of your classmates:

23, 26, 23, 19, 19, 24, 35, 33, 19, 19, 21, 23, 31, 26, 23, 24, 19

Calculate the mean, median, mode, and range of your classmates' ages and make a properly labelled histogram.

Mean: _____   Median:_____ Mode: _____ Range: _____

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18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35
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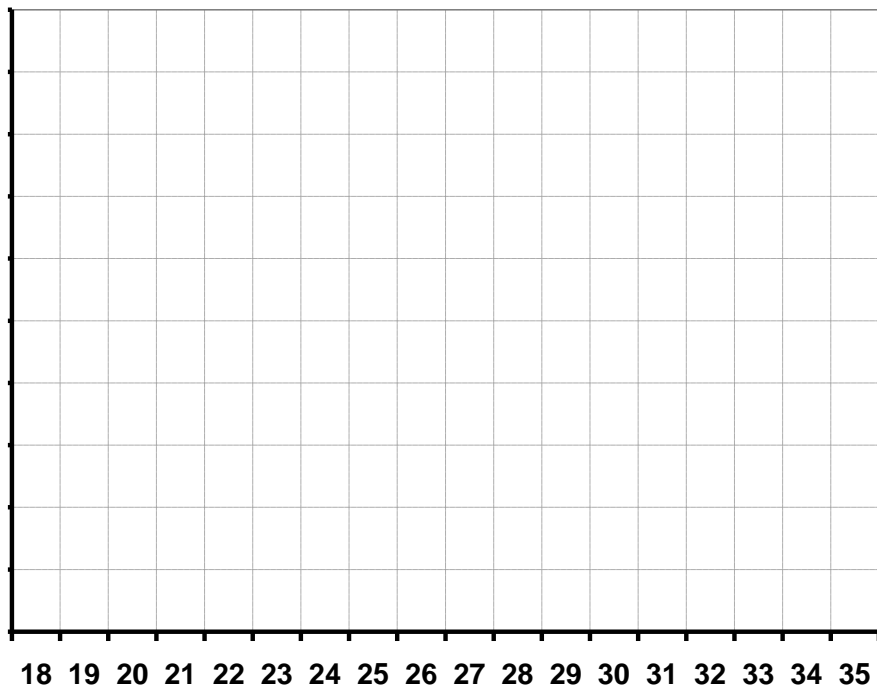
9. Bruce wants to get into the illustrious Klutz Business Program at university. The program has a cut off for acceptance. They only accept candidates in the **top** 60% based on an entrance exam. The marks are posted later (by private applicant number) on a bulletin board. Bruce got a score of 66 out 80 possible marks. He notices that a total of 265 students wrote the exam. He notices that 106 students had a mark lower than he, three **other** students had the same mark as he, and the remainder all had a better mark.

> a. calculate Bruce's percentage mark on his exam;
> b. sketch a number line picture of the distribution of all the applicant marks [%]
> c. calculate Bruce's Percentile Rank
> d. explain if Bruce will be accepted into the program.
> e. If the 80th percentile cut off (P_{80}) was at an exam score of 92% determine how many students had an exam score better than **92%**.
> f. **Bonus**. If the 90th percentile cut off was at an exam mark percentage of 96%, explain what that tells you about the marks and the applicants and the course.