Math 304
SOLUTIONS - FINAL STUDY GUIDE I

I. Statistics - Multiple Choice

1.) D, but the title is missing
2.) D
3.) C

4.) A circle graph or pie chart would be best to illustrate relative amounts of chemicals in a substance as it is dealing with all the chemical substances (when the circle is completed 100% of the data is included) compared to one another.

5.) The mean, as it is the average of all the values and the extreme low score will pull down the mean, while the median & mode will not be effected.

6.) a. Mean = $\frac{640}{8} = 80$ b. Z-Score = $\frac{90-80}{25.5} = \frac{10}{25.5} = 0.39$ c. 65%

II. Probability

1. D
2. A
3. A

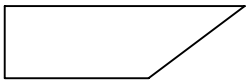
4.) $\frac{57}{64}$ (Hint Use Pascal's Triangle)

5.) Probability = $\frac{13}{26} \bullet \frac{12}{25} = \frac{156}{650}$ OR $\frac{1}{2} \bullet \frac{12}{25} = \frac{6}{25}$ or 24%

6.) Probability = $\frac{4}{9} \bullet \frac{11}{14} = \frac{22}{63}$

7.) Rosa is **NOT** correct! The chance of another head is independent of what has happened previously, & the probability of another head is equal to the probability of another tail.

Application/Problem Solving

8.) 

Which is a right trapezoid

9.) a.)

front

3	6
2	7

Back

5	4
8	1

b.)

19	14	3	30
22	11	6	27
23	10	7	26
18	15	2	31

17	16	1	32
24	9	8	25
21	12	5	28
20	13	4	29

10. $V_{bucket} = \pi r^2 h$

so $V = (3.14)(15^2)(30) = 21{,}195\ cm^3 = 21{,}195\ ml$

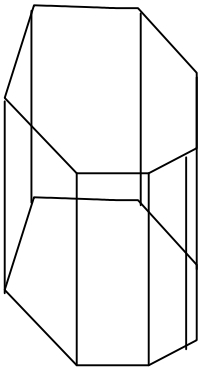
$$\frac{21,195\ ml}{1\ bucket} \times \frac{2\ sec}{1\ ml} \times \frac{1\ min}{60\ sec} \times \frac{1\ hr}{60\ min} \times \frac{1\ day}{24\ hrs} = 0.49\ days/bucket$$

It takes about ½ day for a bucket to fill

III. Geometric Shapes

1.) C
2.) A
3.) B

4.) Right Heptagonal Prism (drawing optional)



5.) 8 Faces; 6 lateral faces & 2 bases

6.) $\frac{180(N-2)}{180} = \frac{900}{180}$ ➔ $N-2 = 5$

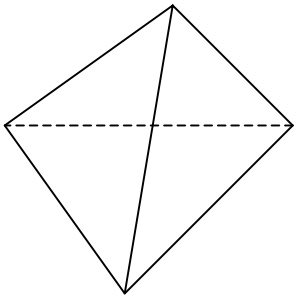
$+2 \quad +2$

$N = 7$ sides or heptagon

7.) All squares are rectangles as they are both parallelograms with 4 right angles and with opposite sides equal. Not all rectangles are squares, as squares must have 4 equal sides.

8. A tetrahedron is a triangular pyramid with 4 congruent faces. These faces are made up of equilateral triangles.

(again drawing optional for this, but it helps get an idea of its properties)



IV. Measurement

1.) A
2.) A
3.) B

4.) iii, ii, i, iv; OR 3cm, 300mm, 3m, .03km

5.) 4.7kg = 4.7L = 4700mL

6.) $(240)(120)(1.5) = 43{,}200\text{cm}^3$

7.) 5 square units

8.) $A = \pi r^2$

$2r = \pi r^2$

$r = \frac{2}{\Pi}$

$C = 2 \bullet r\pi$

$C = 2\left(\frac{2}{\Pi}\right)\pi = 4 \text{ units}$