

Name _____

Finite Mathematics (Math 10120), Fall 2020

Quiz 4 Friday, October 9, 2020

1. The 20 members of the Pet Club are asked how many pets they have, and give the following information:

5, 8, 7, 4, 4, 6, 4, 7, 4, 6, 5, 4, 6, 4, 6, 4, 4, 5, 6, 5.

Complete the frequency and relative frequency distributions below (make sure the frequencies add up to 20!), and then compute the mean.

# pets	Frequency	Relative Frequency
4	8	$\frac{8}{20} = \frac{2}{5}$
5	4	$\frac{4}{20} = \frac{1}{5}$
6	5	$\frac{5}{20} = \frac{1}{4}$
7	2	$\frac{2}{20} = \frac{1}{10}$
8	1	$\frac{1}{20}$

mean $\mu = 5.2$

$$\mu = \frac{8 \cdot 4 + 4 \cdot 5 + 5 \cdot 6 + 2 \cdot 7 + 1 \cdot 8}{20} = \frac{104}{20} = 5.2$$

2. The following frequency distribution has a mean $\mu = 65$. Find the **population** variance and standard deviation of this data. We want you to show your work, so punching these numbers into a calculator that produces this information won't get credit.

Score x_i	Frequency f_i	$(x_i - \mu)$	$(x_i - \mu)^2$	$f_i (x_i - \mu)^2$
80	2	15	225	450
70	2	5	25	50
60	5	-5	25	125
50	1	-15	225	225
<u>10</u>				<u>850</u>

$$\sigma^2 = \frac{850}{10} = 85$$

$$\sigma = \sqrt{85} = 9.22$$

variance $\sigma^2 = 85$

standard dev $\sigma = 9.22$