

5.4 Continued

Friday, May 29, 2015 9:36 AM

5.4 Examples Continued

Bob wants to find out if he has normal data for his survey. His results are below.

Interval	10-19	20-29	30-39	40-49	50-59	60-69
Frequency	3	5	17	20	11	4
Midpoint	14.5	24.5	34.5	44.5	54.5	64.5

Age >
Yes → "are you smart?"

Steps:

1. Find the midpoint of the interval for each.
2. Calculate the mean.

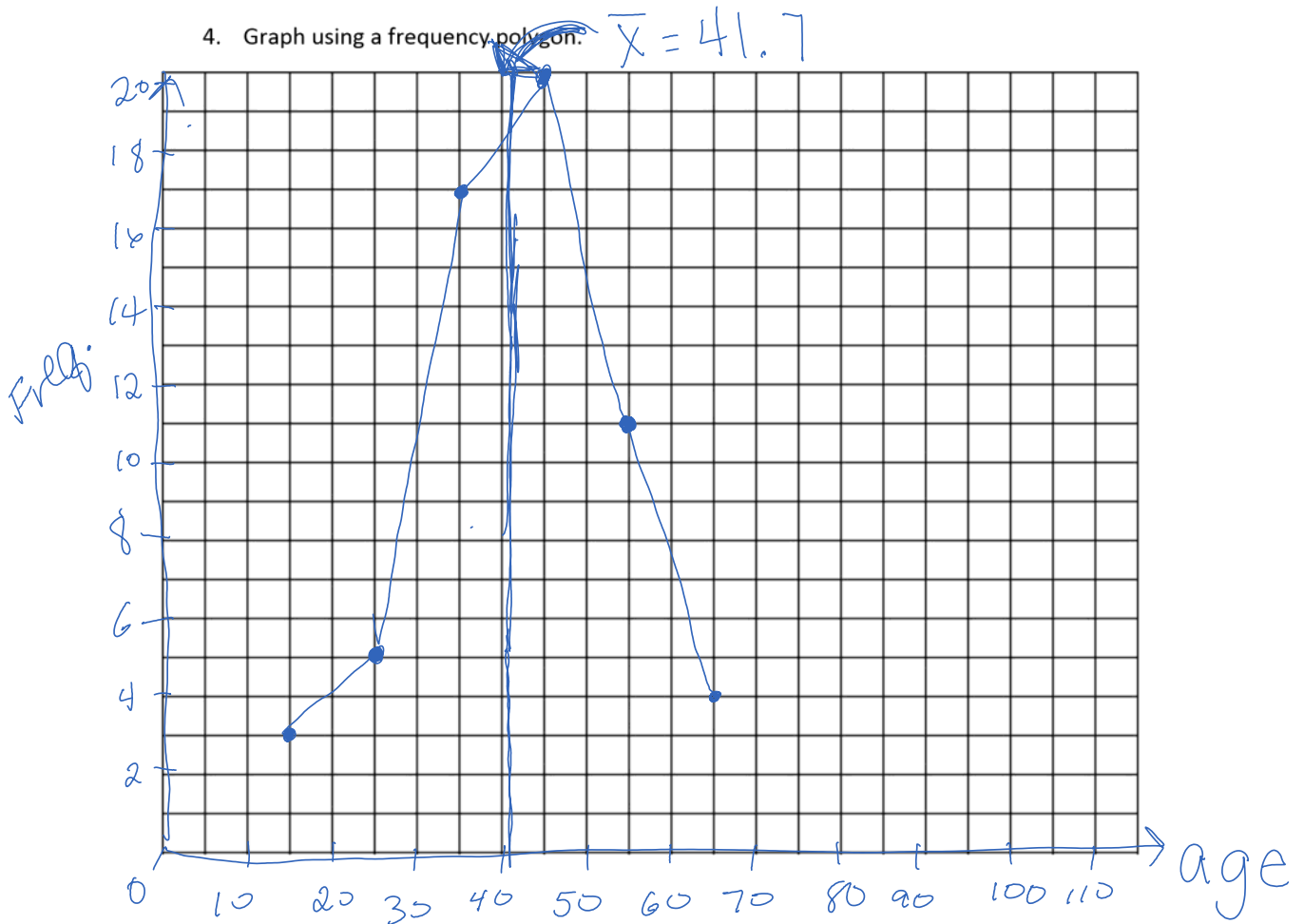
$$\bar{x} = 41.7$$

μ = mean of a population

3. Calculate the standard deviation.

$$\sigma = 12.1$$

4. Graph using a frequency polygon.

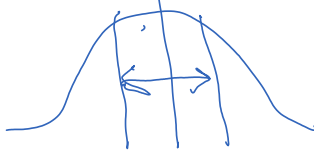


5. Does it look roughly like a bell curve?

Yes - it roughly does

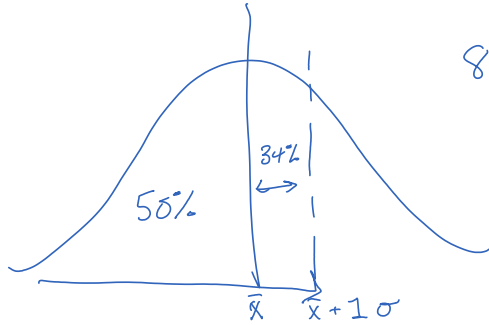
Extension:

6. Using the normal curve, what percentage of data falls within one standard deviation (on either side of the mean)?



$$34\% + 34\% = 68\%$$

7. What value would have 84% of the data?



$$84 - 50 = 34\%$$

$$\bar{x} + 1\sigma$$
$$41.7 + 12.1 = 53.8$$

53.8

P. 123 #1, 3, 4, 5

+ hand-in
due
Monday!