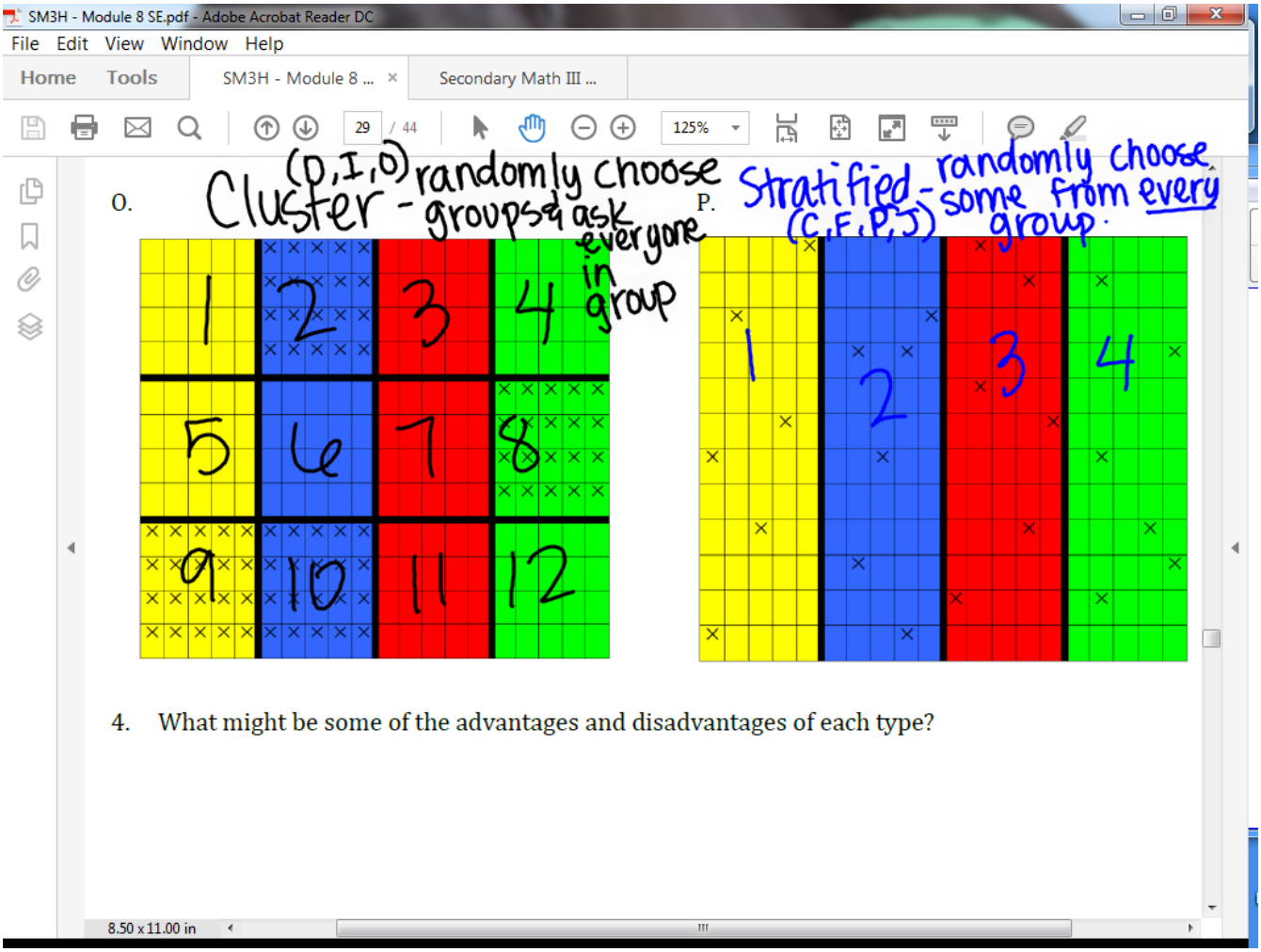
Questions on 8.5 HW? We need to go over our groups from 8.5 classwork...look that over.

Boy: $\frac{17}{29}$

Girl: $\frac{12}{29}$

Feb 7-1:31 PM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O.
Cluster - (D,I,O) randomly choose groups & ask everyone in group
P.
Stratified - randomly choose some from every group. (C,F,P,J)
1
2
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4. What might be some of the advantages and disadvantages of each type?
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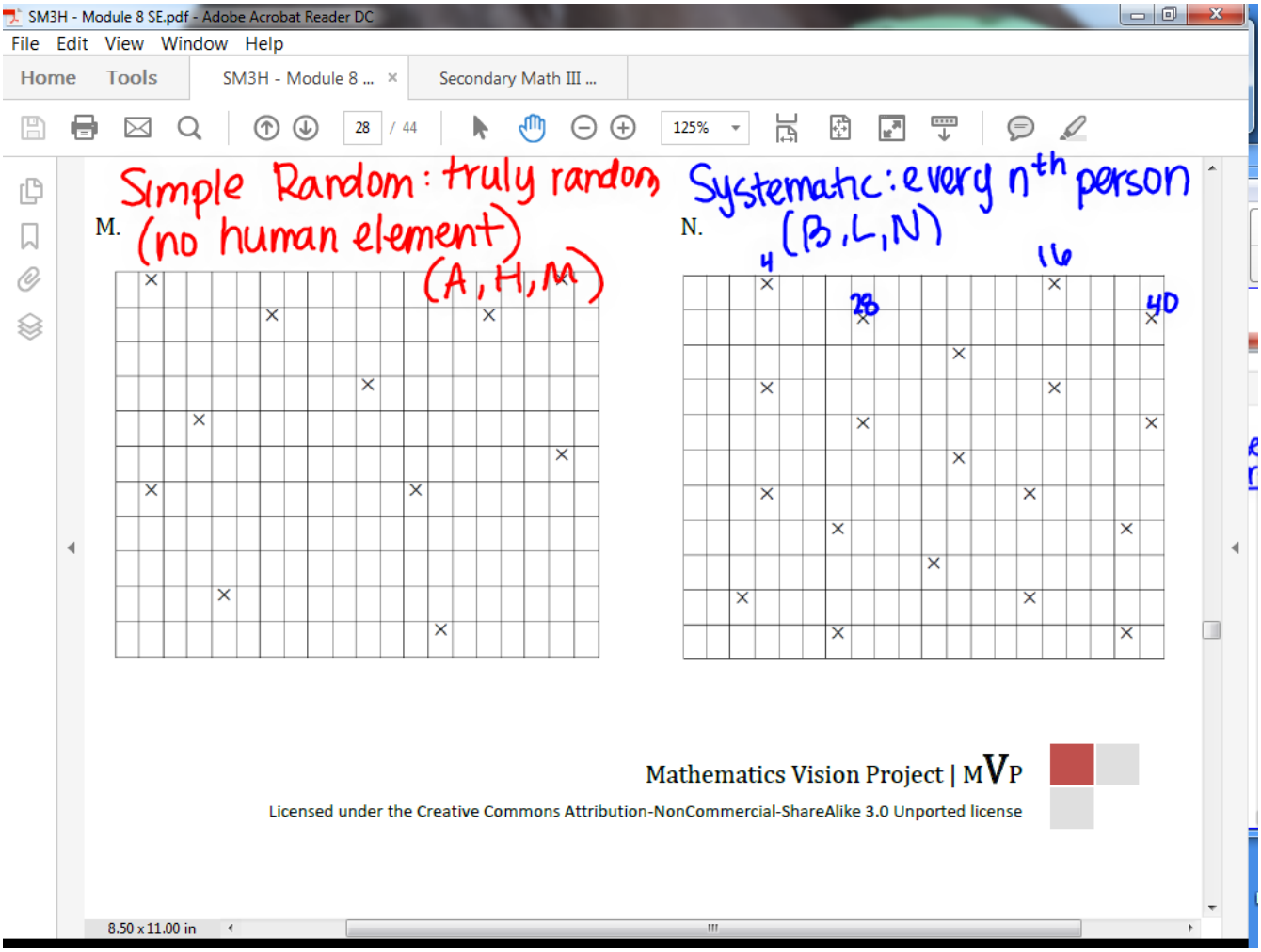
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Simple Random: truly random (no human element)
(A, H, M)
M.
Systematic: every nth person
(B, L, N)
N.
4
16
28
40
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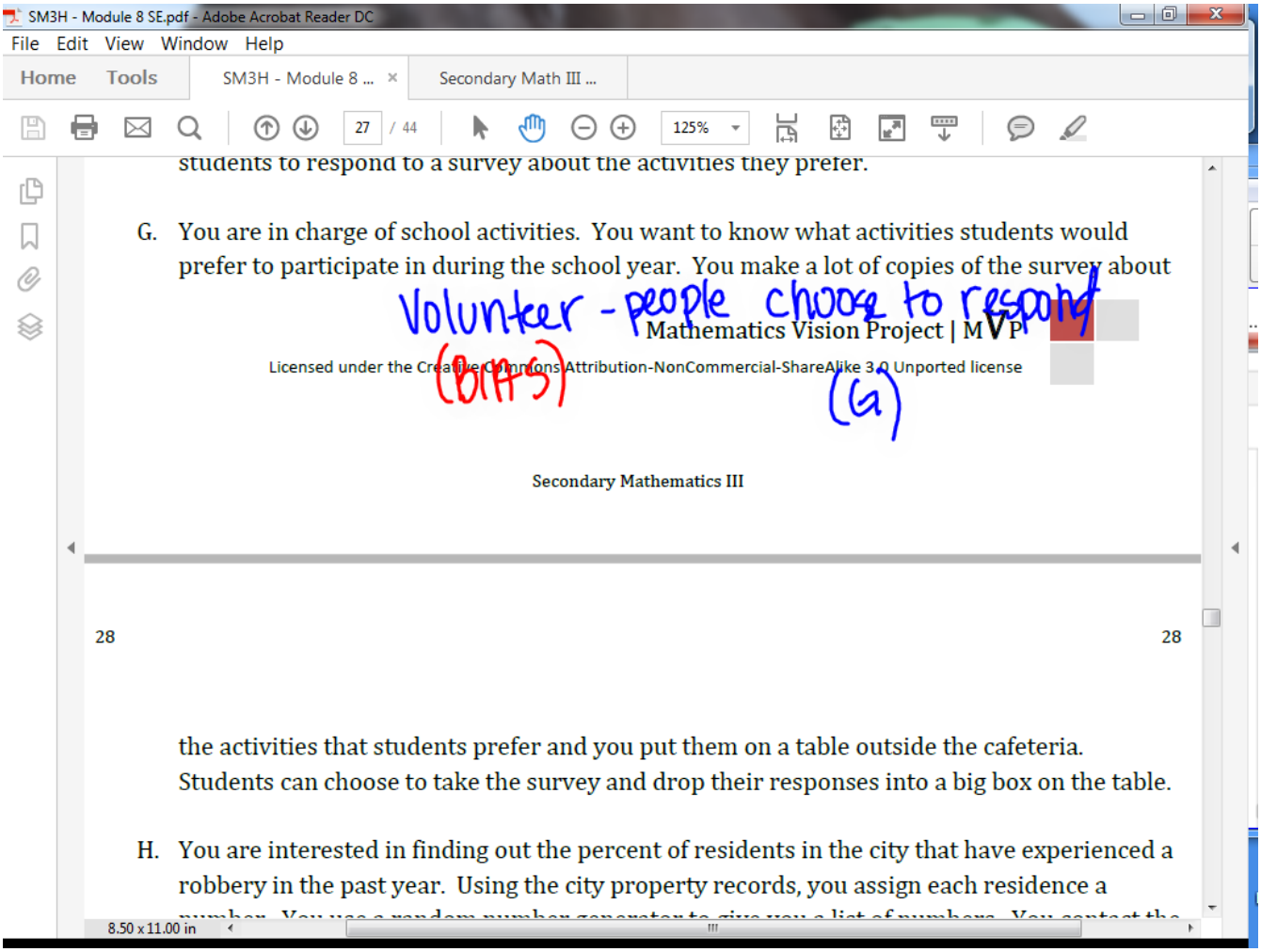
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students to respond to a survey about the activities they prefer.

G. You are in charge of school activities. You want to know what activities students would prefer to participate in during the school year. You make a lot of copies of the survey about

Volunteer - people choose to respond

(bias) (G)

Secondary Mathematics III

28 28

the activities that students prefer and you put them on a table outside the cafeteria. Students can choose to take the survey and drop their responses into a big box on the table.

H. You are interested in finding out the percent of residents in the city that have experienced a robbery in the past year. Using the city property records, you assign each residence a

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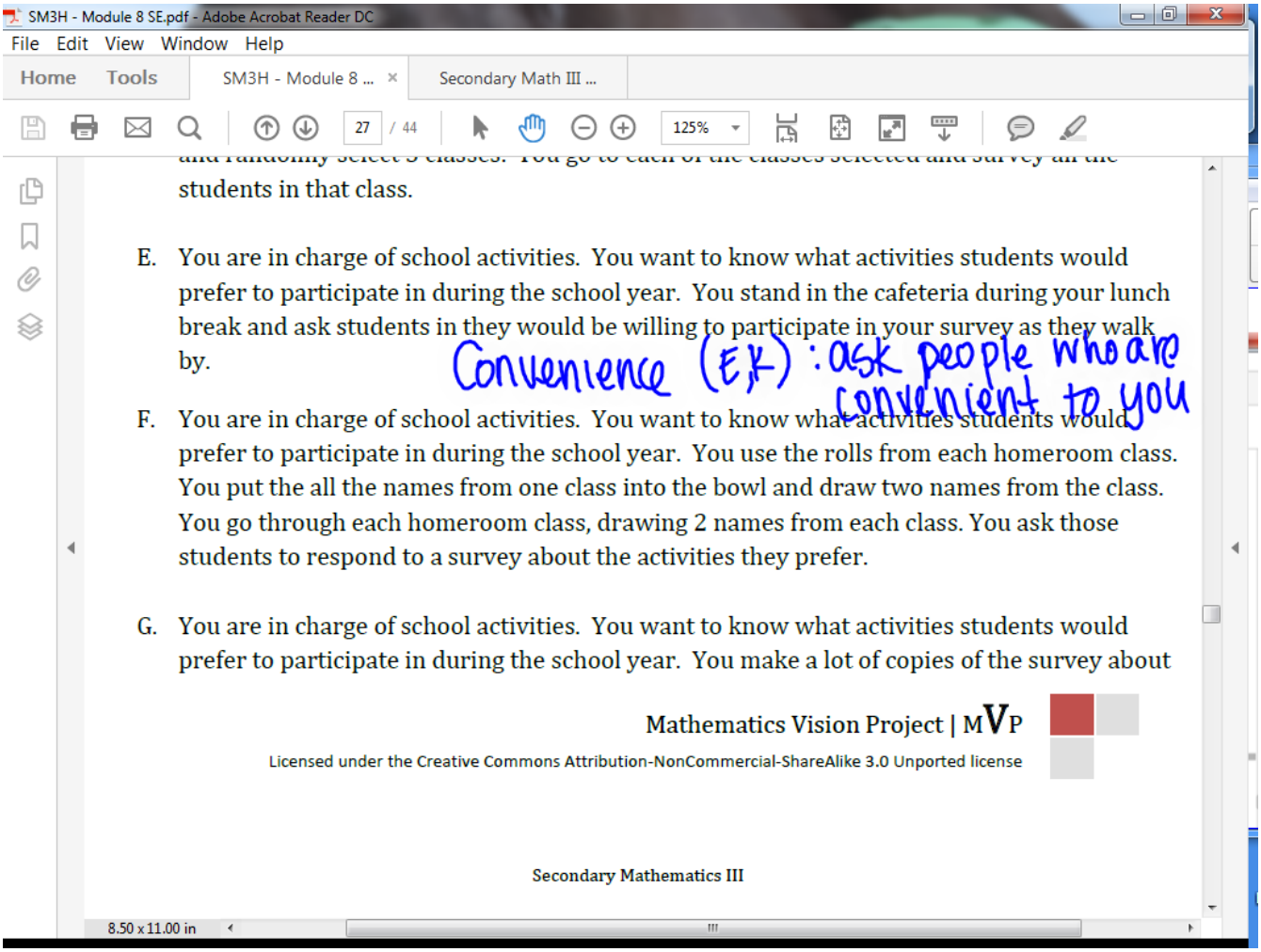
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students in that class.
E. You are in charge of school activities. You want to know what activities students would prefer to participate in during the school year. You stand in the cafeteria during your lunch break and ask students in they would be willing to participate in your survey as they walk by.
Convenience (E,F): ask people who are convenient to you
F. You are in charge of school activities. You want to know what activities students would prefer to participate in during the school year. You use the rolls from each homeroom class. You put the all the names from one class into the bowl and draw two names from the class. You go through each homeroom class, drawing 2 names from each class. You ask those students to respond to a survey about the activities they prefer.
G. You are in charge of school activities. You want to know what activities students would prefer to participate in during the school year. You make a lot of copies of the survey about
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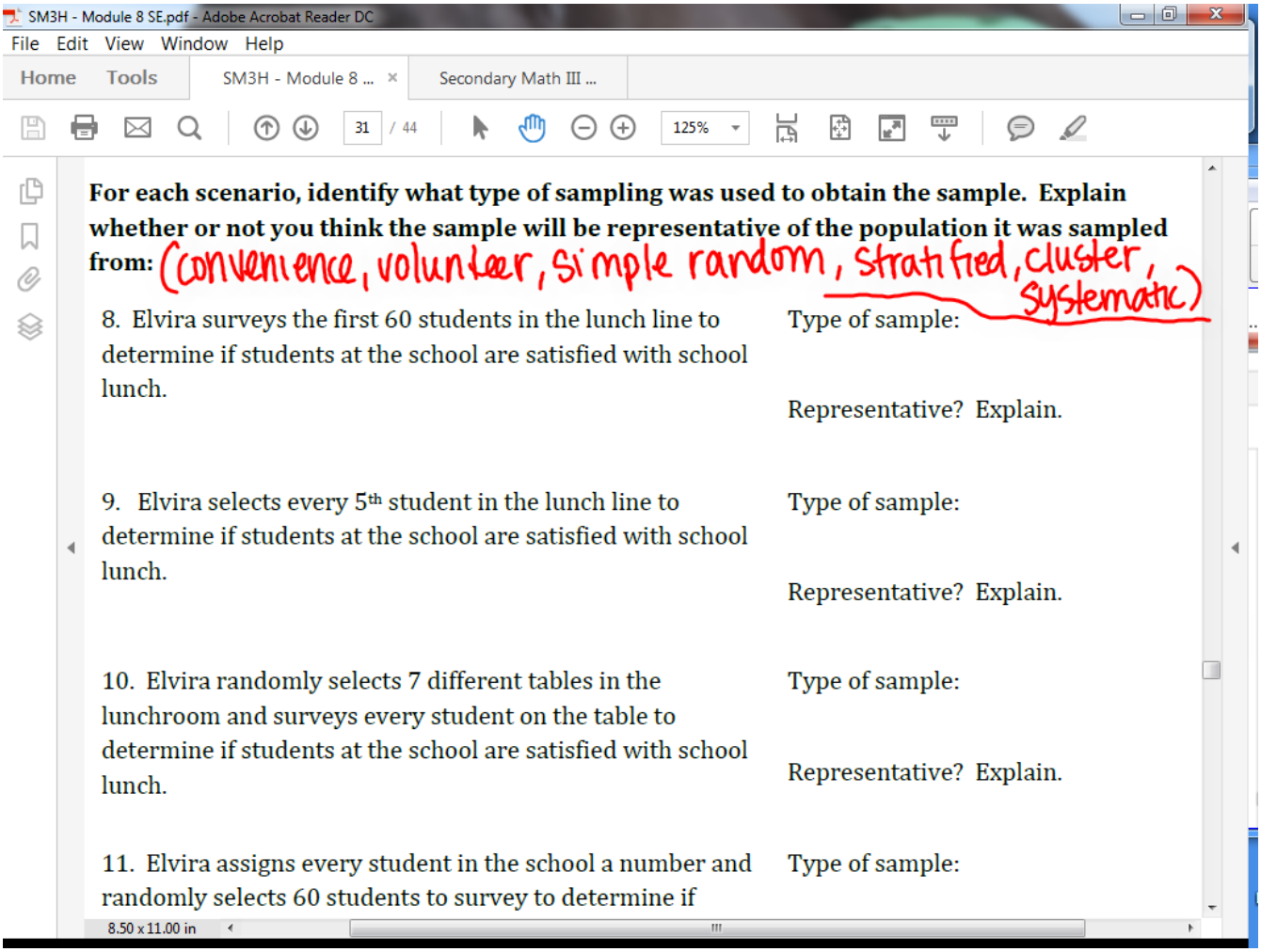
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For each scenario, identify what type of sampling was used to obtain the sample. Explain whether or not you think the sample will be representative of the population it was sampled from: (convenience, volunteer, simple random, stratified, cluster, systematic)

8. Elvira surveys the first 60 students in the lunch line to determine if students at the school are satisfied with school lunch.

Type of sample:

Representative? Explain.

9. Elvira selects every 5th student in the lunch line to determine if students at the school are satisfied with school lunch.

Type of sample:

Representative? Explain.

10. Elvira randomly selects 7 different tables in the lunchroom and surveys every student on the table to determine if students at the school are satisfied with school lunch.

Type of sample:

Representative? Explain.

11. Elvira assigns every student in the school a number and randomly selects 60 students to survey to determine if

Type of sample:

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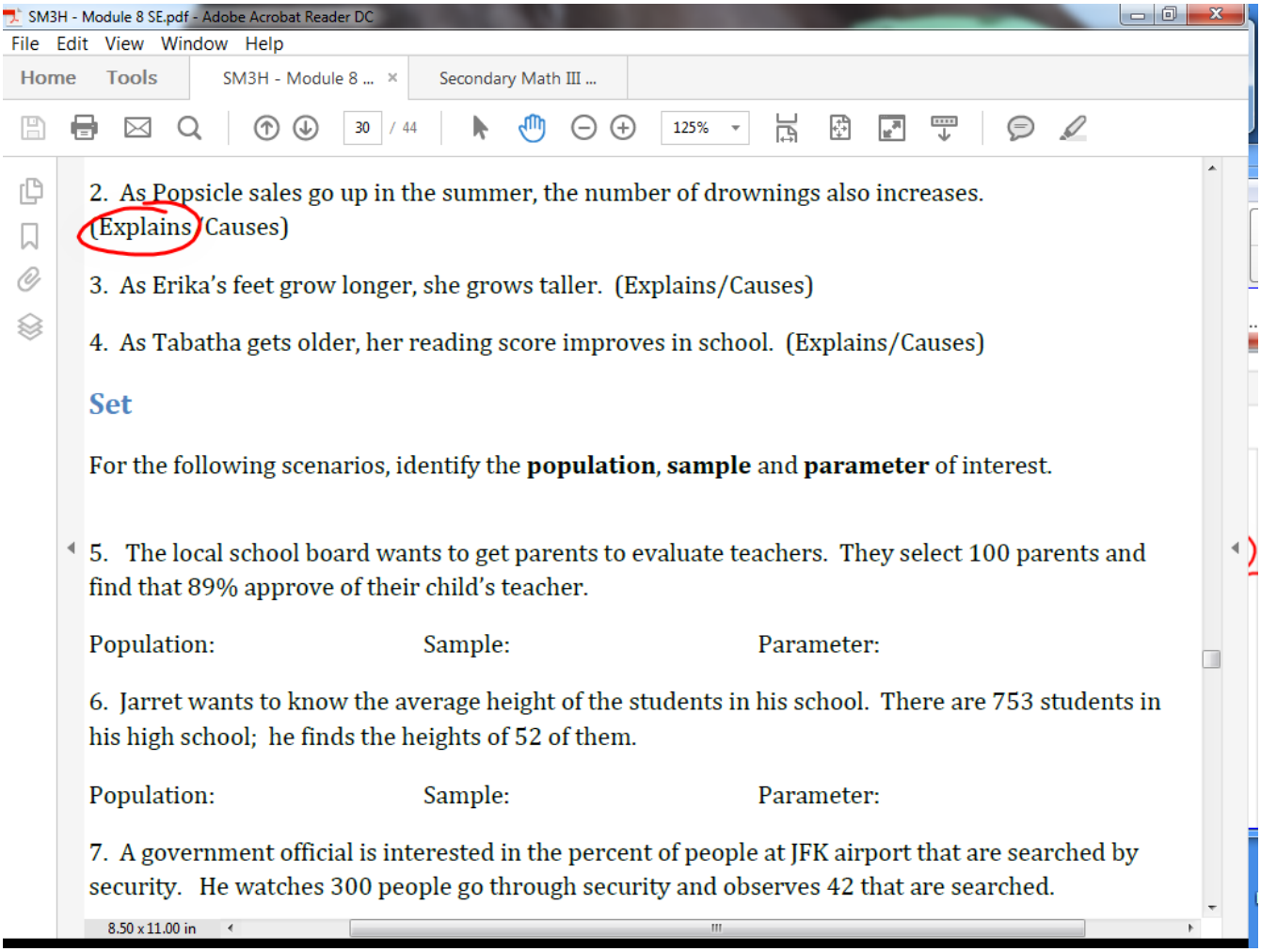
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2. As Popsicle sales go up in the summer, the number of drownings also increases. (Explains/Causes)

3. As Erika's feet grow longer, she grows taller. (Explains/Causes)

4. As Tabatha gets older, her reading score improves in school. (Explains/Causes)

Set

For the following scenarios, identify the **population**, **sample** and **parameter** of interest.

5. The local school board wants to get parents to evaluate teachers. They select 100 parents and find that 89% approve of their child's teacher.

Population: Sample: Parameter:

6. Jarret wants to know the average height of the students in his school. There are 753 students in his high school; he finds the heights of 52 of them.

Population: Sample: Parameter:

7. A government official is interested in the percent of people at JFK airport that are searched by security. He watches 300 people go through security and observes 42 that are searched.

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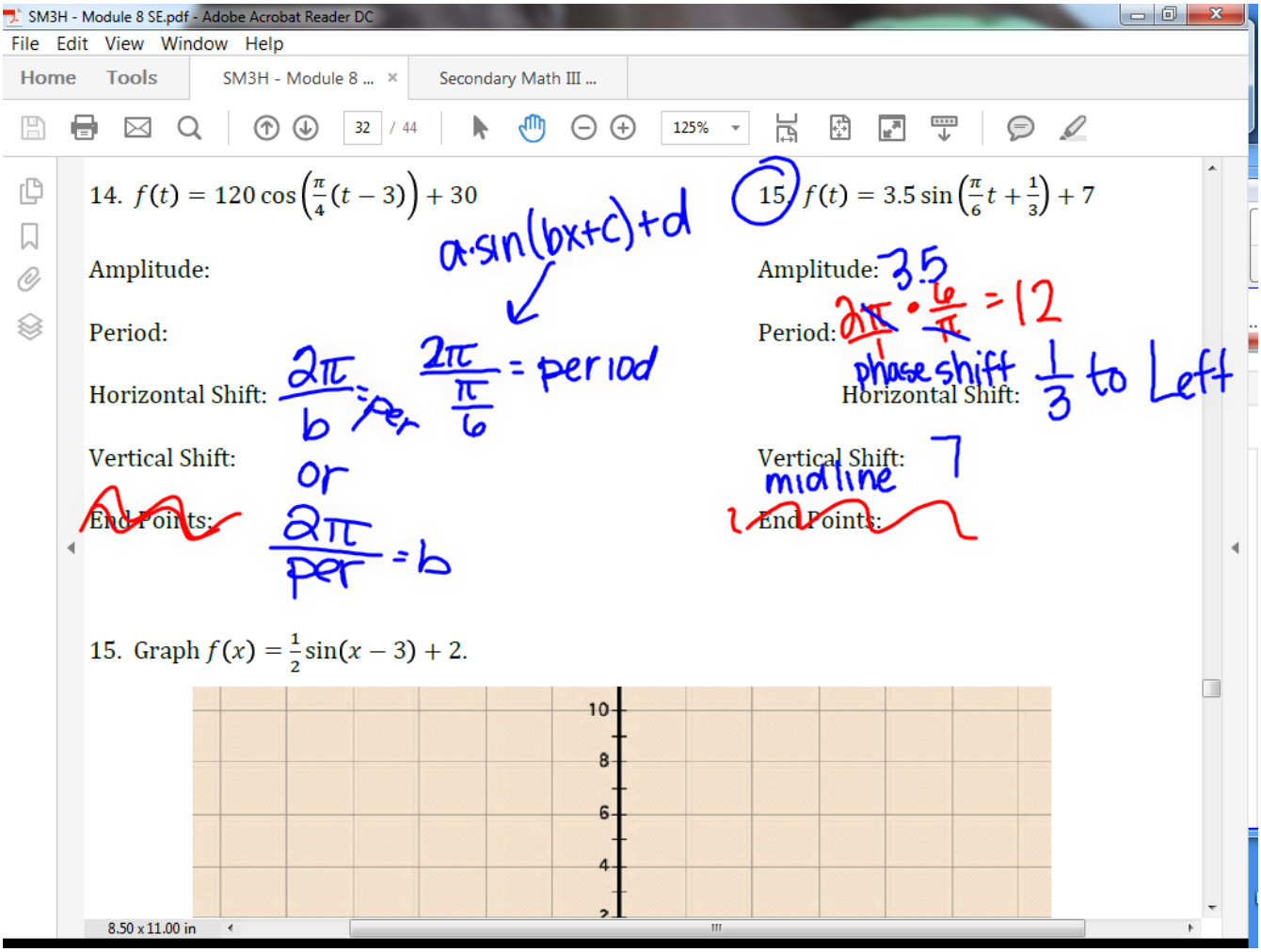
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14. $f(t) = 120\cos\left(\frac{\pi}{4}(t-3)\right) + 30$
Amplitude:
Period:
Horizontal Shift:
Vertical Shift:
End Points:
a·sin(bx+c)+d
$\frac{2\pi}{b}$ = per
$\frac{2\pi}{\frac{\pi}{6}}$ = period
or
$\frac{2\pi}{per} = b$
15. $f(t) = 3.5\sin\left(\frac{\pi}{6}t + \frac{1}{3}\right) + 7$
Amplitude: 3.5
Period: $2\pi \cdot \frac{6}{\pi} = 12$
Horizontal Shift: phase shift $\frac{1}{3}$ to Left
Vertical Shift: 7
midline
End Points:
15. Graph $f(x) = \frac{1}{2}\sin(x-3) + 2$.
10
8
6
4
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8.6 Let's Investigate

A Solidify Understanding Task

When we want to draw conclusions about some population, there are at least two different statistical ideas to consider. We learned about sampling in *Would You Like to Try a Sample*, since it is usually more practical to sample the population rather than somehow measure everyone or everything in the population.

The second thing to consider is how to measure the parameter of interest, the thing we want to know about the population. Sometimes it's obvious, like if you want to know the average weight of a population, you determine a sample and then put each of the subjects on a scale. Three other techniques are the following:

- **Surveys:** When they want to know how people feel, what their preferences are, what they own, how much they make, etc., researchers often construct a survey to ask the people in the sample about the parameter of interest.
- **Observational Studies:** In this type of study, researchers observe the behavior of the participants/subjects without trying to influence it in any way so they can learn about the parameter of interest.
- **Experiments:** In an experiment, researchers manipulate the variables to try to determine cause and effect.

1. Imagine that you want to know whether a new diet plan is effective in helping people lose weight. You might choose any of the three methods to determine this.

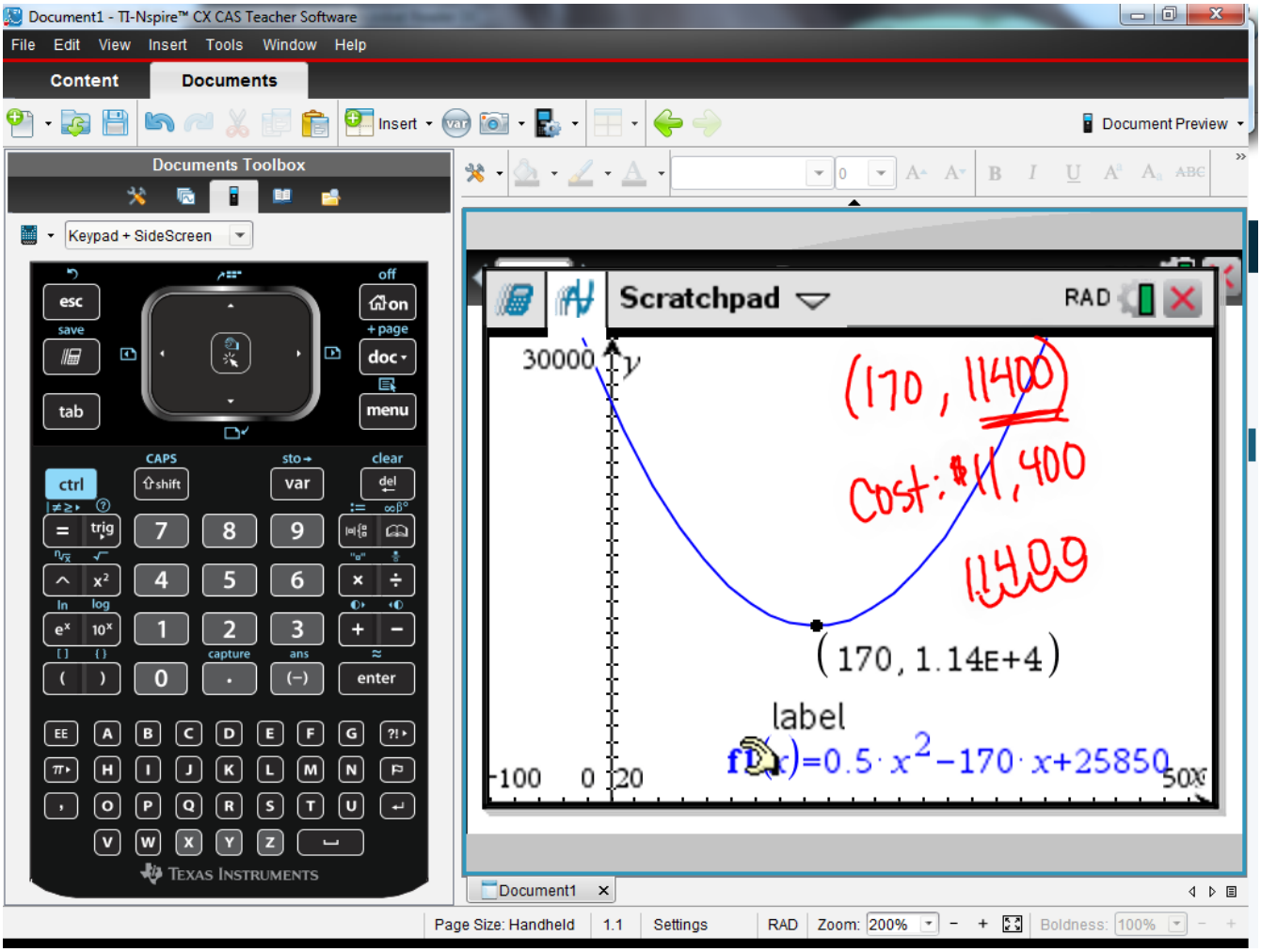
If you used a survey, you could simply ask people that had tried the diet plan in they lost weight.

If you used an observational study, you might monitor volunteers that try the diet plan and measure how much weight they lost.

If you used an experiment, you might randomly assign participants to two groups. One group (the control group) eats as they normally would and the other group (the experimental group) eats according to the diet plan. At the end of two months, the two groups are compared to see the average weight gain or loss in each group.

Based on these three examples,

a. What are some possible advantages and disadvantages of surveys?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TEXAS INSTRUMENTS

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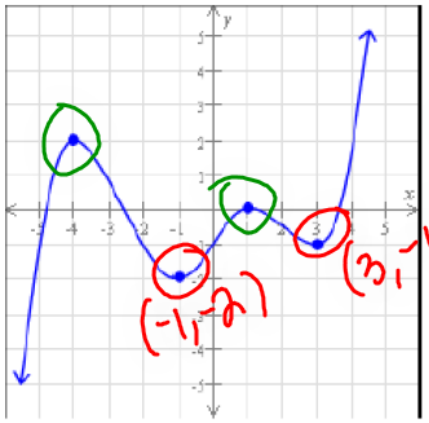
20. Use the graph of the function f below to find the following.

All values at which f has a local minimum $x = -1, 3$

All local minimum values of f $y = -2, -1$

If there is more than one answer, separate them with commas.



Local minimums

21. Find the domain of the function.

$$f(x) = \sqrt{-x+9}$$

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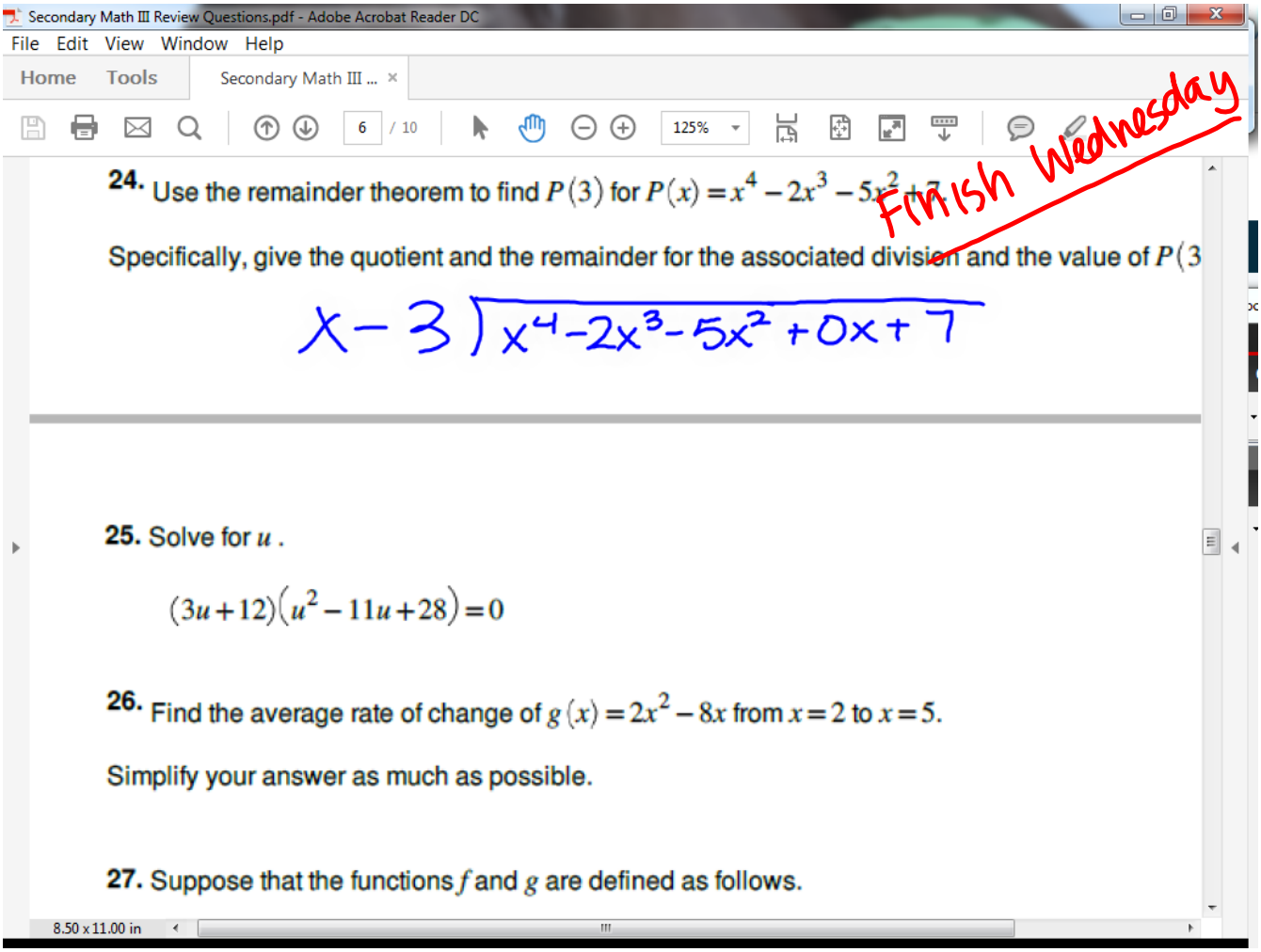
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Finish Wednesday
24. Use the remainder theorem to find $P(3)$ for $P(x)=x^4-2x^3-5x^2+7$.
Specifically, give the quotient and the remainder for the associated division and the value of $P(3$
$x-3\overline{)x^4-2x^3-5x^2+0x+7}$
25. Solve for u.
$(3u+12)(u^2-11u+28)=0$
26. Find the average rate of change of $g(x)=2x^2-8x$ from $x=2$ to $x=5$.
Simplify your answer as much as possible.
27. Suppose that the functions f and g are defined as follows.
8.50 x 11.00 in

b. What are some possible advantages and disadvantages of observational studies?

c. What are some possible advantages and disadvantage of experiments?

2. Identify which method is illustrated by each example:

a. To determine whether drinking orange juice prevents colds, researchers randomly assigned participants to a group that drank no orange juice or a group that drank two glasses of orange juice a day. They measured the number of colds that each group had over the course of the year and compared the results of the two groups.

experiment

b. To determine whether exercise reduces the number of headaches, researchers randomly selected a group of participants and recorded the number of hours each participant exercised and the number of headaches each participant experienced.

observational study

c. To determine the effectiveness of a new advertising campaign, a restaurant asked every tenth customer if they had seen the advertisement, and if it had influenced their decision to visit the restaurant.

survey

d. To determine if a new drug is an effective treatment for the flu, researchers randomly selected two groups of people that had the flu. One group was given a placebo (a sugar pill that has no physical effect) and one group was given the new drug. Researchers measured the number of days that participants experienced flu symptoms and compared the two groups to see if they were different.

experiment

e. To determine if higher speed limits cause more traffic fatalities, researchers compared the number of traffic deaths on randomly selected stretches of highway with 65 mph speed limits to the number of traffic deaths on an equal number of randomly selected stretches of highway with 75 mph speed limits.

observational study

**We are skipping #3-6 on pgs. 34-35*

Apr 7-1:15 PM

SAGE REVIEW PACKET:

-Work on #26-39 today

Apr 3-1:11 PM

Homework

Finish 8.6 "Ready, Set, Go"

Mar 28-11:26 AM