DatStat Unit 3 Quiz (50 poi

Read each prompt carefully. Then answer each question with full sentences. Be sure to read over what you have written.

1. **Name two sampling methods that are biased. Explain why each method is biased.**

   Voluntary Response Sample is biased because only the people that respond will be included in data. ✓

   Convenience Sampling is biased because these people will be easiest to reach will get results fast. ✓

2. A prison warden is interested in lowering the number of repeat occurrences of prison violence (fights) in his prison. He hires you to conduct an experiment which will look into preventative measures to stop these offenses. He proposes three methods of preventing these offenses: 1 month solitary confinement, 1 month laundry duty, and 1 month added to your sentence. You can afford to look at a sample of 120 offenders.

   a. **Design an experiment which tests the effectiveness of these punishments.** Will randomly choose 60 offenders to get in one section of the cell 3 the other 60 will be in the other section. All offenders will be treated the same and do same routines. Make sure All offenders start off the same. At end see if offenders get mad & fight with giving them a punishment then give them another chance, see if they

   -5
   Control
   Group

   b. **The warden also wants to know if various racial groups react differently to** the three punishments given in the study. He wants to look at Caucasians, African Americans, Latinos, and Asians. **What type of experimental design would you choose? Explain why.** do it again

   Blocking design because seeing how different groups react to treatment

3. A student needs to select 5 out of 37 classmates to make a small sample for a survey involving teen smoking. **Describe how this student would obtain her sample.**

(-25)

Will use convenience sampling because student only needs 5 samples and student will just reach out to the most easy people out there

4. An experimenter wants to know the effects of room temperature on manual dexterity (working with your hands). She chooses 3 temperatures: 50, 70, and 90 degrees for the subjects to work in. The response variable is the *number of correct insertions* of a peg and hole apparatus that requires subjects to use both hands simultaneously. The subjects work on the apparatus for 1 minute. She can afford to test 30 volunteers.

a. Because individuals vary greatly in manual dexterity, variation in scores may hide the effect of temperature. **What experimental design would you choose to reduce this variation? Explain.**

(-5)

Blocking or Matched Pairs

placebo because you can mind trick people because once they are a certain type of hot or cold they dont know the temp

b. **Describe how you would perform the experiment you chose in part a.**

(-10)

Replication Control Group

Randomly get 10 people each in 2 groups and make sure one goes in 50° another in 70. From there we will send 5 ppl in 90° and 5 in Regular temp. We will see how people react and realize the temp.

c. **Could this experiment be double blind? Explain.**

(-5)

Yes, because people won't really know the temp with out any devices so they could be tricked.

95/100 +5

100
DatStat Unit 3 Quiz (50 points)

Read each prompt carefully. Then answer each question with full sentences.
sure to read over what you have written.

1. **Name two sampling methods that are biased. Explain why each method is biased.**

✓ Voluntary Response Sample : Its biased becuase people that feel strongly about something will call in and try to say exactly what they feel.

✓ Convenience sampling : Not everyone (whole population) will be in the sample.

2. A prison warden is interested in lowering the number of repeat occurrences of prison violence (fights) in his prison. He hires you to conduct an experiment which will look into preventative measures to stop these offenses. He proposes three methods of preventing these offenses: 1 month solitary confinement, 1 month laundry duty, and 1 month added to your sentence. You can afford to look at a sample of 120 offenders.

   a. **Design an experiment which tests the effectiveness of these punishments.**

   I will get 4 groups of 30 people. I will randomly choose 30 people to get 1 month solitary / 30 people 1 month laundry duty / 30 people 1 month added to sentence / 30 people with no punishment. They will all have to do everything the same. Same prison, same days. After the month is over I will see my results and see which group had less fights.

   b. The warden also wants to know if various racial groups react differently to the three punishments given in the study. He wants to look at Caucasians, African Americans, Latinos, and Asians. **What type of experimental design would you choose? Explain why.** ✓

   I would choose blocked ~~pairs~~. I would choose that so I could put people from the same race into one group and people from another race into a different group.

   Blocked Design

3. A student needs to select 5 out of 37 classmates to make a small sample for a survey involving teen smoking. **Describe how this student would obtain her sample.** She would put all 37 names in a hat and choose 5 names out. Once she has all 5 names she would ask them questions about teen smoking. by their answers she would get her results. ✓

4. An experimenter wants to know the effects of room temperature on manual dexterity (working with your hands). She chooses 3 temperatures: 50, 70, and 90 degrees for the subjects to work in. The response variable is the *number of correct insertions* of a peg and hole apparatus that requires subjects to use both hands simultaneously. The subjects work on the apparatus for 1 minute. She can afford to test 30 volunteers.

   a. Because individuals vary greatly in manual dexterity, variation in scores may hide the effect of temperature. **What experimental design would you choose to reduce this variation? Explain.**
   I would choose Matched pairs so I could see how EVERYONE reacts to every temperature. Since Im testing the results on themselfes. ✓

   b. **Describe how you would perform the experiment you chose in part a.**
   I would put all 30 people in a work station. I would randomly flip a coin to see which temperature would go first. During each temperature they will have to do the same thing, Same work, same tools they were using. By doing that I will look at my results.

   (-5)
   control
   Group

   c. **Could this experiment be double blind? Explain.**
   ✓ I dont think this experiment could be double blind. I think that becuase the experimentor couldnt do anything to change how the workers react to the temperature change.

(60/100) +5

DatStat Unit 3 Quiz (50 points)

Read each prompt carefully. Then answer each question ⟨torn⟩ **Be sure to read over what you have written.**

1. **Name two sampling methods that are biased. Explain why each method is biased.**

   One of the two sampling Methods that are biased is Voluntary Response because not every one will respond and some can lie or just not willing to answer. Another one is Convenience Sampling because not every one will answer or just make up an answer. ✓

2. A prison warden is interested in lowering the number of repeat occurrences of prison violence (fights) in his prison. He hires you to conduct an experiment which will look into preventative measures to stop these offenses. He proposes three methods of preventing these offenses: 1 month solitary confinement, 1 month laundry duty, and 1 month added to your sentence. You can afford to look at a sample of 120 offenders.

   a. **Design an experiment which tests the effectiveness of these punishments.**

   (-10)

   Replication
   Control Group

   I will design an experiment were I will randomly choose 120 offenders. Then I will put them in a seprate place and wait till a fight happens. After that, I will place them in one of the three methods and see if they rather stop fighting or have one of the three punishments.

   b. The warden also wants to know if various racial groups react differently to the three punishments given in the study. He wants to look at <u>Caucasians, African Americans, Latinos, and Asians.</u> **What type of experimental design would you choose? Explain why.**

   (A)

   (-5)

   Blocking

   I would choose an OGservational Study because that way I will see if the punishments do affect on them or if they just don't care.

3. A student needs to select 5 out of 37 classmates to make a small sample for a survey involving teen smoking. **Describe how this student would obtain her sample.**

✓ well she can randomly choose the students by using a calculator and choosing 5 out of the 37. She will obtain that result by going on her calculator to MATH → PRB #5 randint (min, max) in her case (1, 37).

4. An experimenter wants to know the effects of room temperature on manual dexterity (working with your hands). She chooses 3 temperatures: 50, 70, and 90 degrees for the subjects to work in. The response variable is the *number of correct insertions* of a peg and hole apparatus that requires subjects to use both hands simultaneously. The subjects work on the apparatus for 1 minute. She can afford to test 30 volunteers.

a. Because individuals vary greatly in manual dexterity, variation in scores may hide the effect of temperature. **What <u>experimental design</u> would you choose to reduce this variation? Explain.**

(-5)

Blocking or Matched Pairs

I would do an observational study to see if the room temperature affects. I will randomly choose the 30 volunters and will test and see if it affects or not.

b. **Describe how you would perform the experiment you chose in part a.**

(-15)

I would test the 30 volunters one week per temperature. One week will be 50 degrees, one at 70 degrees, and the last one at 90 derees. Then I will compare their results to eachother and will see if the temperature affects or not

c. **Could this experiment be double blind? Explain.**

(-5)

It could be double blinded because I can have them work without knowing what is the temperature of the room. then I will compare their results to themsefs.

DatStat Unit 3 Quiz (50 points)

Read each prompt carefully. Then answer each question with full sentences. Be sure to read over what you have written.

1. Name two sampling methods that are biased. Explain why each method is biased. Convenience Sampling is a biased method. This is because when you use Convenience Sampling you are only getting info from the those who are Convinced, those who are the closest. This is not the whole population. Voluntary Response Sampling is biased because we are only getting data from those who want to be heard or tested on. ✓ This, again is not the whole population.

2. A prison warden is interested in lowering the number of repeat occurrences of prison violence (fights) in his prison. He hires you to conduct an experiment which will look into preventative measures to stop these offenses. He proposes three methods of preventing these offenses: 1 month solitary confinement, 1 month laundry duty, and 1 month added to your sentence. You can afford to look at a sample of 120 offenders.

   a. **Design an experiment which tests the effectiveness of these punishments.** I will use my calculator to randomly seperate all 120 offenders into 4 groups of 30. One group will get one month of solitary confinement, if they get into a fight, another will get 1 month of laundry duty, another 1 month added to their sentences, and lastly one group will get no punishment. I will use Replication to give them all the same routine. After 3 months I will see how fights each group got into.

   b. The warden also wants to know if various racial groups react differently to the three punishments given in the study. He wants to look at Caucasians, African Americans, Latinos, and Asians. **What type of experimental design would you choose? Explain why.** I will use blocking as my experimental design because I could block each race into different groups. This would make it easier do test how each race reacts to these punishments ✓

3. A student needs to select 5 out of 37 classmates to make a small sample for a survey involving teen smoking. **Describe how this student would obtain her sample.** The student would give each student a number from 1 to 37. Then she will use her calculator, go on MATH, then find VandInt(and put in VandInt(1,37) and press enter five times. This will ✓ give her five random numbers, and five random students.

4. An experimenter wants to know the effects of room temperature on manual dexterity (working with your hands). She chooses 3 temperatures: 50, 70, and 90 degrees for the subjects to work in. The response variable is the *number of correct insertions* of a peg and hole apparatus that requires subjects to use both hands simultaneously. The subjects work on the apparatus for 1 minute. She can afford to test 30 volunteers.

   a. Because individuals vary greatly in manual dexterity, variation in scores may hide the effect of temperature. **What experimental design would you choose to reduce this variation? Explain.** I would use MatchedPairs as my experimental design because each person varies in manual dexterity. This would help the experiment get rid of a lot of lurking variables. ✓

(-5)
Control
Group

   b. **Describe how you would perform the experiment you chose in part a.** I would use Matched pairs in this design. I will also be testing for 4 days. One the first day I will flip a coin to pick who will work with their hands in 50°, 70°, 90°, or average room temp. on the second day I use randomization again to pick who goes in what room, I will do this process for the next few days until everyone has tested in each room once. I will use replication to make Sure the room used is the same as for each temp. I measure by the number of correct insertions of the peg and hole apparatus.

   c. **Could this experiment be double blind? Explain.** This experiment could be blind so that the other dont purposely Work Slower or faster due to temp, but making it double blind would be useless. ✓

70/100 +5

100

DatStat Unit 3 Quiz (50 poin

Read each prompt carefully. Then answer each questio.   ...ces. Be sure to read over what you have written.

1. **Name two sampling methods that are biased. Explain why each method is biased.**

Convenience sampling is biased because you're not getting the populations opinion, ✓ you're just getting those who are closed around you, so they might be biased towards yes.

Voluntary response is also biased because only those who respond will have a ✓ say, and they could be biased, people.

2. A prison warden is interested in lowering the number of repeat occurrences of prison violence (fights) in his prison. He hires you to conduct an experiment which will look into preventative measures to stop these offenses. He proposes three methods of preventing these offenses: 1 month solitary confinement, 1 month laundry duty, and 1 month added to your sentence. You can afford to look at a sample of 120 offenders.

   a. **Design an experiment which tests the effectiveness of these punishments.**

   We will divide randomly the offenders ✓ into 3 groups. The control group ✓ will not get any of the punishments given above, and the experimental groups will get one of the 3 punishments. We will use replication ✓ by treating all offenders the same. The response variable will be wether the punishments were effective in getting them to renew or not.

   b. The warden also wants to know if various racial groups react differently to the three punishments given in the study. He wants to look at Caucasians, African Americans, Latinos, and Asians. **What type of experimental design would you choose? Explain why.** ✓

   I would the blocking design seperating the offenders by there race. we will randomly select who gets what punishment. Replication will be used by treating all offenders the same. We will test 3 weeks so everyone gets to try all punishments. The response variable will be wether a certain race react better or worse towards the punishments.

3. A student needs to select 5 out of 37 classmates to make a small sample for a survey involving teen smoking. **Describe how this student would obtain her sample.**

(-15)

This would be a blind sample, because evaluator might be biased towards who gets the survey. They would randomly choose 5 students. We will use replication by treating everyone the same and give them the same questions.

4. An experimenter wants to know the effects of room temperature on manual dexterity (working with your hands). She chooses 3 temperatures: 50, 70, and 90 degrees for the subjects to work in. The response variable is the *number of correct insertions* of a peg and hole apparatus that requires subjects to use both hands simultaneously. The subjects work on the apparatus for 1 minute. She can afford to test 30 volunteers.

a. Because individuals vary greatly in <u>manual dexterity</u>, variation in scores may hide the effect of temperature. **What experimental design would you choose to reduce this variation? Explain.** ✓

We would use blocking to seperate people into groups and get rid of lurking variables that might affect the test results.

b. **Describe how you would perform the experiment you chose in part a.**

(-10)

Control Group
Randomization
of Treatments

I would randomly select 30 volunteers. Then use blocking by seperating them by their age. This will also be a double blind project so the evaluator and subjects don't know the tempeture. I will use replication by treating all the subjects the same. The respons variable would be which group was better.

c. **Could this experiment be double blind? Explain.**

(-5)

Yes so the subjects and evaluator don't know the temperature, due to being biased towards the results.

60/100 +5

100

DatStat Unit 3 Quiz (50 points)

Read each prompt carefully. Then answer each question with full sentences. Be sure to read over what you have written.

1. **Name two sampling methods that are biased. Explain why each method is biased.**

✓ Voluntary Response Sample because you only get data from those who choose to respond. Maybe only the ones who are bias towards the expirement will call.

✓ Convienience sampling would be data from those that are easy to reach. So if a Republican asked all his employees about something they will most likely have the same bias opinion.

2. A prison warden is interested in lowering the number of repeat occurrences of prison violence (fights) in his prison. He hires you to conduct an experiment which will look into preventative measures to stop these offenses. He proposes three methods of preventing these offenses: 1 month solitary confinement, 1 month laundry duty, and 1 month added to your sentence. You can afford to look at a sample of 120 offenders.

   a. **Design an experiment which tests the effectiveness of these punishments.**

   Randomly split the 120 offenders into 3 groups so you have 40 offenders in each punishment. Record how they react differnt. Use <u>replication</u> to make sure each group gets treated the same.

   (-5)
   Control Group

   b. The warden also wants to know if various racial groups react differently to the three punishments given in the study. He wants to look at Caucasians, African Americans, Latinos, and Asians. **What type of experimental design would you choose? Explain why.**

   a blocking design ✓ to seperate each race into a group.

3. A student needs to select 5 out of 37 classmates to make a small sample for a survey involving teen smoking. **Describe how this student would obtain her sample.** Randomly choose 5 students using a calculator.

(-15)

4. An experimenter wants to know the effects of room temperature on manual dexterity (working with your hands). She chooses 3 temperatures: 50, 70, and 90 degrees for the subjects to work in. The response variable is the *number of correct insertions* of a peg and hole apparatus that requires subjects to use both hands simultaneously. The subjects work on the apparatus for 1 minute. She can afford to test 30 volunteers.

   a. Because individuals vary greatly in manual dexterity, variation in scores may hide the effect of temperature. **What experimental design would you choose to reduce this variation? Explain.**

   (-5) I would use blocking Design, by seperating age closeness with each temperature. [Put the 18-25 in 90°, 26-35 in 70°, and 36+ in 50°. Switch them every few minutes] I would also make this blind for the subjects only, they couldbe bias towards how well they work.

   b. **Describe how you would perform the experiment you chose in part a.**

   (-15)

   Replication
   Control Group
   Randomization of Treatments

   c. **Could this experiment be double blind? Explain.**
   ✓ There is no need to double blind because the expiremenier cannot chooe how well the volunteer works.