Module 1 Practice problem and Homework answers

Practice problems
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religion: Christian, Islamic, Hindu, Buddhist, Sikh, Jewish, other religion, not religious

> Answer: nominal – these groups simply categorize people, but do not allow us to rank one group higher or lower than other groups, which is required for an ordinal variable.

years of work experience in current job: 0, 1, 2, 3, 4, 5, 6, etc.

> Answer: ratio – the answer options allow us to rank people by the number of years they've been in their job, tells us the exact interval between answers, and there is a meaningful 0 point.

years of work experience in current job: 0, 1 – 3, 4 – 6, 7 – 10, 11 or more

> Answer: ordinal – the answer options allow us to rank people by the number of years they've been in their job, but does not tell us the exact interval between answers.

temperature, measured in Celsius or Fahrenheit

> Answer: interval – we can know the exact interval between two temperatures, but there is no meaningful 0 point on the Celsius or Fahrenheit scales (that is, when the temperature is 0, that doesn't mean that there is no temperature, instead it means that the temperature is less than 1 and greater than -1).

monthly income

> Answer: ratio – we can rank people by their income, we can know the exact interval between two values, and there is a meaningful zero point.

opinion scale: completely agree, somewhat agree, somewhat disagree, completely disagree

> Answer: ordinal – we can rank people by their answers, but we can't know the exact difference between a person who completely agrees and one who somewhat agrees (and so on).

Which of the following listings is not mutually exclusive?

Two lists are not mutually exclusive:
a) types of clothing: shirts, sweaters, pants, socks, shoes, coats, tops, underwear, other
If you were trying to organize your closet, putting all of your clothes into piles, which pile would you put shirts pants into? They could only go in the pants pile. However, what about shirts? They could go either in the shirts pile or the tops pile. Same with sweaters. Therefore, because some of the answer categories overlap, or because one type of clothing belongs to more than one of the categories, this listing is not mutually exclusive.
b) Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, weekend
Because Saturday is also a weekend day, these two categories overlap, making this listing not mutually exclusive.

Which of the following listings is not exhaustive?

Two lists are not mutually exclusive:
a) types of fruits: cherry, apricot, pineapple, kiwi, blueberries
Because we can think of types of fruit that aren't covered in this list, this list cannot be considered exhaustive
b) Monday, Tuesday, Wednesday, Thursday, Friday, Saturday
To make this list exhaustive, we would add Sunday.

Homework problems

1. What is your gender?

Answer: nominal -- these groups simply categorize people, but do not allow us to rank one group higher or lower than other groups, which is required for an ordinal variable.

2. What is your marital status?

Answer: nominal -- these groups simply categorize people, but do not allow us to rank one group higher or lower than other groups, which is required for an ordinal variable.

3. How many children do you have? _____

Answer: ratio – we can rank people by their number of children, we can know the exact interval between two values, and there is a meaningful zero point.

4. How many children do you want to have some day? (none, 1 or 2, 3 or 4, 5 or more)

Answer: ordinal – we can rank people by their answers, but we can't know the exact difference between a person who wants 1 or 2 children and another who wants 3 or 4.

5. *What is your ethnicity?*

   Answer: nominal – these groups simply categorize people, but do not allow us to rank one group higher or lower than other groups, which is required for an ordinal variable.

6. *What was your family income last month?*

   Answer: ratio – we can rank people by their income, we can know the exact interval between two values, and there is a meaningful zero point.

7. *How pleased are you with the opportunities for outdoor recreation in your city or town? (very pleased, somewhat pleased, not very pleased, not at all pleased)*

   Answer: ordinal – we can rank people by their answers, but we can't know the exact difference between a person who is very pleased and another who is somewhat pleased.

8. *What is your IQ score? (Hint, there is no meaningful zero on the IQ scale.)*

   Answer: interval – we can know the exact interval between two scores, but there is no meaningful 0 point on the IQ scales, which means that it doesn't make sense to say that someone with an IQ score of 120 is twice as smart as someone with a score of 60.

9. *When you were 16 years old, was your family a) very well off compared to other families, b) about average, or c) not so well off?*

   Answer: ordinal – we can rank people by their answers, but we can't know the exact difference between a person who was in an "about average" family and a "not so well off" family.

10. *How long is your hair? (no hair, very short, short, medium, long, very long)*

    Answer: ordinal – we can rank people by their answers, but we can't know the exact difference in hair length between a person who has short hair and a person who has long hair.