Statistics Unit 1 worksheet: Types of data: categorical, numerical, discrete, continuous

Name _____ Date _____ Period _____

1. Carlos runs a bike repair shop. For each bike brought in, he records:

(a) the kind of bike (road, mountain or kids'), (b) the number of spokes he replaces, (c) the time the repair takes, in minutes, (d) the color of the frame, (e) the mass of the bike, in kilograms, (f) the number of days the bike waits before it is picked up.

Sort each variable as categorical or numerical. Say whether each numerical variable is discrete or continuous.

2. A school office keeps a record for each student. Each number below is written with digits. Say whether it is an amount (numerical) or a label for a group or an individual (categorical).

(a) the student's ID number, (b) the number of days the student was absent this term, (c) the number of the student's homeroom, (d) the student's height, in centimeters, (e) the number on the student's locker, (f) the number of books the student borrowed from the library this term.

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3. A sandwich shop writes down the bread chosen for its first 20 orders on Monday:

wheat, white, wheat, rye, sourdough, wheat, white, wheat, sourdough, rye, wheat, white, sourdough, wheat, white, rye, wheat, sourdough, white, wheat.

(a) Count each kind of bread. (b) Which bread is the mode? (c) What percent of the orders were on rye?

4. A hospital scale shows a newborn baby's mass to the nearest tenth of a kilogram. Mei's baby brother reads 3.4 kg.

(a) What could his true mass be?

(b) The clinic's old scale shows mass to the nearest whole kilogram. What would it show for him?

5. Ryan's class spends a morning sorting donated books for the town library's book sale. The teacher writes down how many minutes each student worked before taking a break:

15, 42, 28, 35, 8, 50, 22, 30, 45, 18, 25, 38.

She sorts the times into classes: short (under 20 minutes), medium (20 minutes up to 40 minutes) and long (40 minutes and over).

(a) Count the students in each class.

(b) What fraction of the students worked for a long time?

(c) How many more minutes did the longest worker work than the shortest worker? Could you find this from the class counts alone? Explain.

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6. A movie theater lists its Saturday showings. Every column is written with digits.

Screen	Showing code	Tickets sold	Film length (min)
2	214	84	95
5	309	120	128
1	127	56	102
5	452	143	128
3	380	97	110
2	118	76	95

(a) Which columns are categorical? Give a reason.

(b) Find the mean number of tickets sold per showing, and say what it means.

(c) Which screen sold the most tickets in all on Saturday, and how many?

7. Leah asks the 20 students in her reading club "Do you have a library card?" She codes each answer 1 for yes and 0 for no. The mean of the codes is $\frac{3}{5}$. How many of the students have a library card, and how many do not?

8. A taco truck labels its sauces by heat: 1 for mild, 2 for medium and 3 for hot.

(a) Andre says a hot sauce is three times as hot as a mild one, because 3 is three times 1. Explain why the labels do not show this.

(b) Andre buys four sauces labeled 1, 1, 3 and 3. He says their average heat is 2, so on average his sauces are medium. Explain what is wrong, and give a summary of his four sauces that does make sense.

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