Statistics Unit 1 quiz 6: Cumulative frequency graphs and percentiles

Name _____ Date _____ Period _____

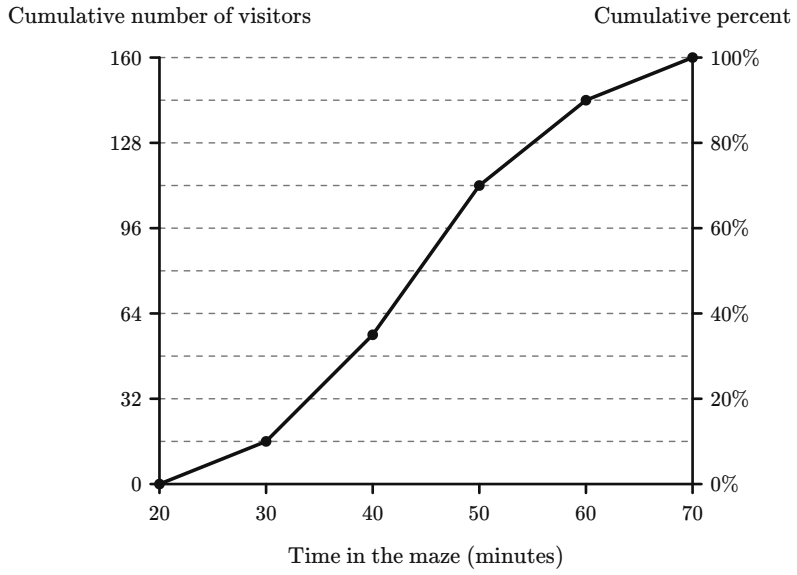
4 questions, 11 points

1. An airline weighed the 65 suitcases checked on one flight, in kilograms. A mass on a class boundary goes in the class to its right.

Mass (kg)	6 to 10	10 to 14	14 to 18	18 to 22	22 to 26
Suitcases	5	21	22	14	3

Use the cumulative frequency graph of these counts to estimate the 60th percentile of the masses, to the nearest tenth of a kilogram. (2 points)

2. The cumulative frequency graph shows how long each of 160 visitors took to get through a corn maze. Each plotted point lies on a faint line or halfway between two. (3 points)



(a) Estimate the percentile rank of a 45 minute visit.

(b) Estimate the percent of visitors who took longer than 62 minutes, and about how many visitors that is.

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3. A farm weighed 100 potatoes from one harvest. Its cumulative frequency graph, with classes of different widths, passes through the points below. (3 points)

Mass (g)	**50**	**100**	**150**	**250**	**400**
Potatoes lighter than this	0	12	40	82	100

(a) Find the number of potatoes in each class.

(b) Which class holds the most potatoes? Find the slope of each segment of the graph, and say which segment is steepest.

(c) Explain why the steepest segment is not the class with the most potatoes, and what the steepest segment does show.

4. A lake's canoe hire logged its 120 rentals last month, in hours. A time on a class boundary goes in the class to its right. (3 points)

Rental length (hours)	**0 to 1**	**1 to 2**	**2 to 3**	**3 to 4**	**4 to 6**
Rentals	18	42	30	18	12

(a) Use the cumulative frequency graph to estimate Q_1, Q_3 and the interquartile range, to the nearest hundredth of an hour.

(b) One of your two quartile estimates does not rest on the evenly spread assumption. Which one, and why?

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