Math 206 - Quiz 7

March 28, 2018
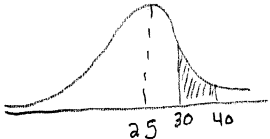
Name __key__

Score _____

Show all work to receive full credit. Supply explanations when necessary.

1. (3 points) In 2005, the average commute to work was 25 minutes with a standard deviation of 6.1 minutes. Assume that commute times are normally distributed.
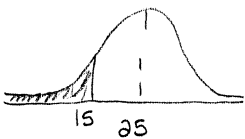
   (a) About what percent of commutes were between 30 and 40 minutes?

$$\text{normalcdf}(30, 40, 25, 6.1) \approx 0.1992$$
$$= \boxed{19.92\%}$$

   (b) About what percent of commutes were less than 15 minutes?

$$\text{normalcdf}(-999999, 15, 25, 6.1)$$
$$\approx 0.0506 = \boxed{5.06\%}$$

2. (2 points) The following table shows the numbers of chocolate chips counted in each of 24 Hannaford Chocolate Chip cookies.

DATA ARE IN NUMERICAL ORDER!

$$11 \quad 12 \quad 12 \quad 12 \quad 13 \quad \boxed{13 \quad 13} \quad 13 \quad 14 \quad 14 \quad 14 \quad 14$$
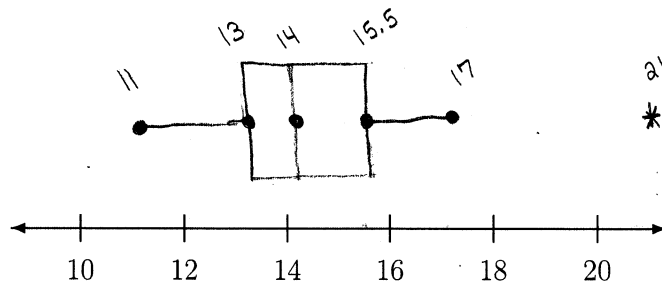$$14 \quad 14 \quad 15 \quad 15 \quad 15 \quad \boxed{15 \quad 16} \quad 16 \quad 16 \quad 16 \quad 17 \quad 21$$

Determine the quartiles and sketch the boxplot.

$$Q_1 = \frac{13+13}{2} = 13$$

$$Q_2 = \text{MED} = \frac{14+14}{2} = 14.$$

$$Q_3 = \frac{15+16}{2} = 15.5$$

$$IQR = 15.5 - 13$$
$$= 2.5$$

OUTLIER BOUNDARIES:

$$13 - 1.5(2.5) = 9.25$$

$$15.5 + 1.5(2.5) = 19.25 \qquad 21 \text{ IS AN OUTLIER!}$$