

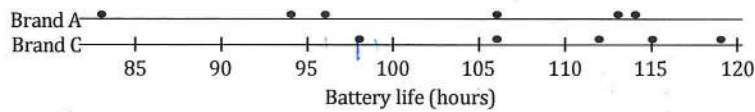
Deviations from the Mean Practice

Name:

Answers

Statistics, Algebra 1

- 1) The lives of five batteries of a third brand, Brand C, were determined. The dot plot below shows the lives of the Brand A and Brand C batteries.



- a. Which brand has the greater mean battery life? (You should be able to answer this question without doing any calculations!)

Brand C has higher mean.

- b. Which brand shows greater variability?

Brand A varies more (ie the data is more spread out.)

- c. Which brand would you expect to have the greater deviations from the mean (ignoring the signs of the deviations)?

Brand A, since the data is spread out more than C.

The table below shows the lives for the Brand C batteries.

Life (Hours)	115	119	112	98	106
Deviation from the Mean	5	9	2	-12	-4

- d. Calculate the mean battery life for Brand C. (Be sure to include a unit in your answer.)

$$\text{mean} \approx \frac{98 + 106 + 112 + 115 + 119}{5} \approx \frac{540}{5} = 108 \text{ hours}$$

- e. Write the deviations from the mean in the empty cells of the table for Brand C given that the mean battery life for Brand C is 110 hours.

see above

- 2) Five people were asked approximately how many hours of TV they watched per week. Their responses were as follows.

6 4 6 7 8

- a) Find the mean number hours of TV watched for these five people.

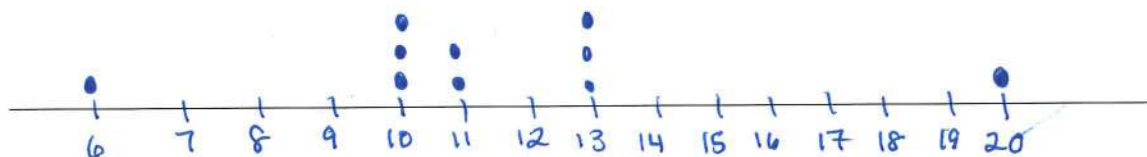
$$\frac{6 + 4 + 6 + 7 + 8}{5} = 6.2 \text{ hours}$$

- b) Find the deviations from the mean for these five data values. (Make a table)

Time watch TV (hours)	4	6	6	7	8
Deviation from mean	-2.2	-0.2	-0.2	0.8	1.8

- 3) Ten members of a high school girls' basketball team were asked how many hours they studied in a typical week. Their responses (in hours) were 20, 13, 10, 6, 13, 10, 13, 11, 11, 10.

- a) Using the axis given below, draw a dot plot of these values. (Remember, when there are repeated values, stack the dots with one above the other.)



- b) Calculate the mean study time for these students. mean = $\frac{20+13+10+6+13+10+13+11+11+10}{10}$
 $= 11.7$

- c) Calculate the deviations from the mean for these study times, and write your answers in the appropriate places in the table below.

Number of Hours Studied	20	13	10	6	13	10	13	11	11	10
Deviation from the Mean	8.3	1.3	-1.7	-5.7	1.3	-1.7	1.3	-.7	-.7	-1.7

Mixed Practice:

4) Solve for x: $\frac{2}{3}x + 7 = -9$

$$\frac{3}{2} \cdot \frac{2}{3}x = -16 \cdot \frac{3}{2}$$

$$x = -24$$

5) $4 - 2(x + 4) = -7 - x$

$$4 - 2x - 8 = -7 - x$$

$$-4 - 2x = -7 - x$$

$$+7 \quad +2x \quad +7 \quad +2x$$

$$3 = x$$

6) Simplify: $(x - 6)(x + 4)$ Double distribute

$$x^2 + 4x - 6x - 24$$

$$x^2 - 2x - 24$$

7) Simplify: $(x + 1)(x^2 + x + 1)$

$$x^3 + x^2 + x + x^2 + x + 1$$

$$x^3 + 2x^2 + 2x + 1$$

8) Simplify: $8x^3 - 2xy + y^2 + 11x^3 + xy - 7x^2 - 6y^2$

Combine like terms

$$19x^3 - xy - 5y^2 - 7x^2$$