

Warm Up

1. Use your calculator to find the equation of the trend line that best models the following data.

Number of days absent	Grade Point Average
0	5.0
4	4.0
9	3.5
2	5.4
0	4.6
25	2.7
7	3.0
6	3.6
41	1.8
3	4.2
1	4.5
8	3.0

$$y = -.07x + 4.41$$

2. Do you think the relationship between days absent and GPA has a positive, negative, or no correlation? Why?

3. If you had a GPA of 3.8 how many days would you have been absent from school?

$$3.8 = -.07x + 4.41$$

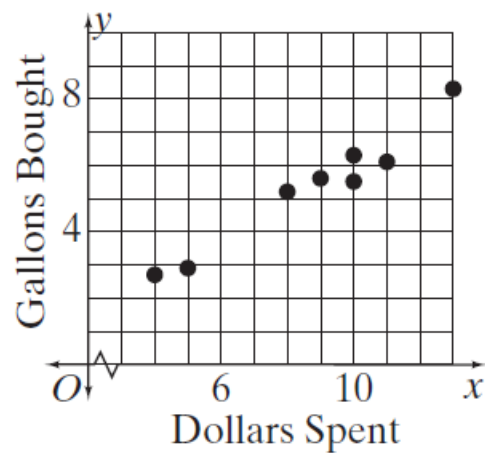
4. If you missed 13 days of school, predict your GPA.

$$-.07(13) + 4.41$$

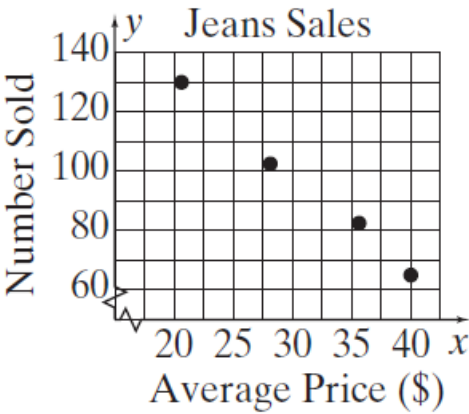
$$-.91 + 4.41 = 3.5$$

Homework Answers - p. 35

1.

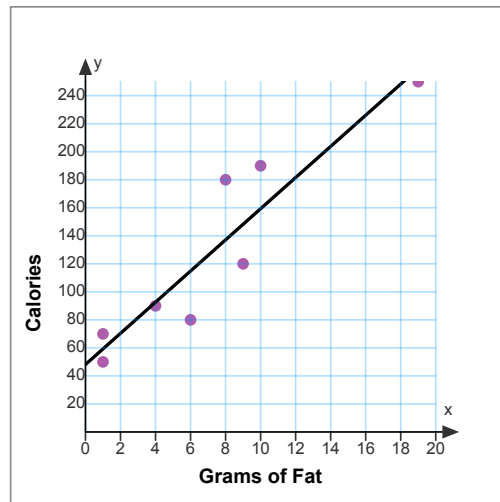


2.



3. neg. correlation
4. pos. correlation
5. no correlation
6. Neg. correlation; the more classes you take, the more work you have, so the less free time you have.
7. Pos. correlation; the more snow the greater the sales of snow shovels.
8. Pos. correlation; the greater the number of cars, the higher the pollution levels for a city.
9. No correlation; baby's length at birth is not related to its birthday.
10. Pos. correlation; the more you exercise, the more Calories you burn.
11. No correlation; the age of a high school student and speed are not related.

15. a.



b. positive correlation

c. the greater the number of grams of fat in a serving of food, the greater the number of calories.

d. about 200 calories

16a. The distance a car traveled on the Indiana toll road and the toll charged.

b. The points have the same x-coordinate, that is, they lie on same vertical line.

c. The points have the same y-coordinate, that is, they lie on the same horizontal line.

d. Pos. correlation - as the distance increases, the toll increases.

Section 1.6

Mean, Median, Mode and Range



Mean

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The *mean* is the arithmetic average of a group of numbers.

Find the mean of a group of numbers

7, 11, 12, 18, 23, 25

Step 1: Add the numbers together.

$$7 + 11 + 12 + 18 + 23 + 25 = 96$$

Step 2: Divide the sum by the number of items.

$$96 \div 6 = 16$$

The mean is 16.



Median

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The *median* is the middle number in a set of ordered numbers.

Find the median of a group of numbers.

20, 19, 23, 18, 26



Step 1: Arrange the numbers from least to greatest.


18, 19, 20, 23, 26

Step 2: Find the middle number.

18, 19, 20, 23, 26

The median is 20.

Median

If there are two middle numbers, how do I find the median?

18, 19, 20, 22, 23, 26

Step 3: Find the mean of the two middle numbers.

$$20 + 22 = 42$$
$$42 \div 2 = 21$$

The median is 21.



Mode

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The *mode* is the number that appears most frequently in a set of numbers.

Find the mode of a group of numbers.

20, 19, 26, 18, 26

Step 1: Arrange the numbers from least to greatest.

18, 19, 20, 26, 26

Step 2: Find the number that is repeated the most.


18, 19, 20, 26, 26

The mode is 26.

?

Practice

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 Calculate the mean, median and mode of the example below.

	mean	median	mode
① 12, 4, 6, 8, 3, 6			
② 35, 22, 22, 36, 45			
③ 6, 1, 7, 4, 1, 4, 0, 9			
④ 99, 67, 94, 99, 50, 80			

Click here for the answer

Find the value of x .

2, 4, 5, 8, x with a mean = 5

$$\frac{2+4+5+8+x}{5} = 5$$

$$\frac{19+x}{5} = 5$$

$$19+x = 25$$

The following numbers are your test scores. You want to average a 80 on all your tests. What do you need to get on this next test to meet your goal?

81 58 90 75 80 x

$$\frac{81+58+90+75+80+x}{6} = 80$$

$$\frac{384+x}{6} = 80$$

$$384+x=480$$

$$x=96$$

What do you suspect "Range" means?

Range is the difference
between the greatest
and the least data value.

Find the range of the set of numbers.

13 15 19 3 25 4 18 10 11 15 8 14

$$25 - 3 = 22$$

Practice

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Roll the die 25 times and fill in the tally chart. Calculate the mean, median, mode, and range of the numbers recorded.

Dice Number	Number of Rolls
1	
2	
3	
4	
5	
6	

3333344

Mean =

Range

Median =

Mode =

$$\frac{5(1) + 4(2) + 5(3) + 4(4) + 2(5) + 5(6)}{25}$$

Homework:
p. 43 1 - 21 odd

	mean	media n	mode
12, 4, 6, 8, 3, 6	6.5	6	6
35, 22, 22, 36, 45	32	35	22
6, 1, 7, 4, 1, 4, 0, 9	4	4	1,4
99, 67, 94, 99, 50, 80	81. 5	87	99

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