English Spanish

5 Chapter Review

Check It Out Vocabulary Help BigIdeasMath.com

Review Key Vocabulary

ratio, *p. 192*
equivalent ratio, *p. 193*
rate, *p. 198*
unit rate, *p. 198*
unit cost, *p. 199*
mean, *p. 212*
outlier, *p. 213*
measure of central tendency, *p. 218*
median, *p. 218*
mode, *p. 218*
range, *p. 219*

Review Examples and Exercises

5.1 Ratios *(pp. 190–195)*

Write the ratio of sprinters to long distance runners on the track team.

Track Team	
Sprinters	26
Long distance	14

sprinters → $\frac{26}{14} = \frac{13}{7}$ ← distance runners

Write in simplest form.

∴ The ratio of sprinters to long distance runners is $\frac{13}{7}$, 13 to 7, or 13 : 7.

Exercises

Write the ratio as a fraction in simplest form. Explain what the ratio means.

1. butterflies : caterpillars

2. saxophones : trumpets

5.2 Rates *(pp. 196–201)*

You receive 125 reward points for spending $25 in a store. How many reward points do you receive for every dollar spent?

$$\frac{125 \text{ points}}{25 \text{ dollars}} \overset{\div 25}{=} \frac{5 \text{ points}}{1 \text{ dollar}}$$

∴ You receive 5 points for every dollar spent.

Exercises

Write a unit rate for the situation.

3. 12 stunts in 4 movies

4. 3500 stitches in 3 minutes

English Spanish

5.3 Solving Rate Problems *(pp. 202–207)*

A horse can run at a speed of 55 feet per second. How far can it run in 5 seconds?

$d = rt$ — Write the formula for distance.

$= \frac{55 \text{ feet}}{1 \text{ second}} \times 5 \text{ seconds}$ — Substitute the given values. The seconds divide out.

$= 275$ feet — Multiply.

∴ The horse can run 275 feet in 5 seconds.

Exercises

5. **BIKING** You bike 3 miles in 15 minutes. At this rate, how long does it take you to bike 10 miles?

6. **MUSIC** A song has 28 beats in 4 seconds. At this rate, how many beats are there in 30 seconds?

5.4 Mean *(pp. 210–215)*

The table shows the number of pictures of six students in a yearbook. What is the mean number of pictures per student?

Student	Pictures
1	5
2	9
3	10
4	6
5	6
6	12

$\text{mean} = \frac{5 + 9 + 10 + 6 + 6 + 12}{6}$ ← sum of the data; ← number of values

$= \frac{48}{6}$, or 8 — Simplify.

∴ The mean number of pictures per person is 8.

Exercises

Find the mean of the data.

7. 4, 5, 7, 14, 17, 12, 18

8. 15, 5, 8, 12, 5, 9, 4, 10, 2, 11

9. **WIND ENERGY** The data show the amounts of wind energy that four states produced in one year. Find the mean of the data.

Wind Energy (megawatts)	
Texas	4356
California	2439
Minnesota	1299
Iowa	1273

5.5 Median, Mode, and Range *(pp. 216–221)*

Find the median and mode of the movie lengths in the table.

Order the data from least to greatest.

Movie Lengths (minutes)		
91	112	126
142	122	112
92	144	

Median: 91, 92, 112, 112, 122, 126, 142, 144

$\frac{112 + 122}{2} = \frac{234}{2}$, or 117 Add the two middle values and divide by 2.

Mode: 91, 92, 112, 112, 122, 126, 142, 144 ← The value 112 occurs most often.

∴ The median is 117 minutes and the mode is 112 minutes.

Exercises

Find the median, mode, and range of the data.

10. 8, 8, 6, 8, 4, 5, 6

11. 24, 74, 61, 29, 38, 27, 68, 54

5.6 Analyzing Data Sets *(pp. 222–227)*

Find the mean, median, and mode of the numbers of dancers at tryouts. Which measure best represents the data?

Number of Dancers at Tryouts			
102	92	99	96
92	105	94	200

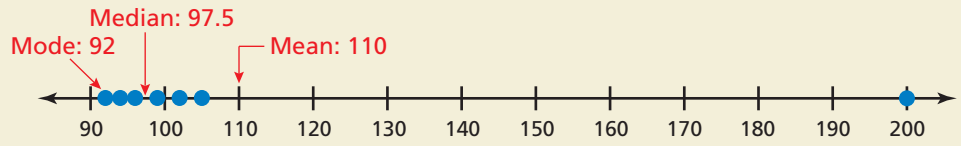
Mean: $\frac{102 + 92 + 99 + 96 + 92 + 105 + 94 + 200}{8} = \frac{880}{8}$, or 110

Order the data from least to greatest.

Median: 92, 92, 94, 96, 99, 102, 105, 200

$\frac{96 + 99}{2} = \frac{195}{2}$, or 97.5

Mode: 92, 92, 94, 96, 99, 102, 105, 200 ← The value 92 occurs most often.



∴ The median best represents the data. The mean is greater than most of the data and the mode is less than most of the data.

Exercises

Find the mean, median, and mode(s) of the set of data. Choose the measure that best represents the data. Explain your reasoning.

12. 36, 12, 14, 12 ,15

13. 23, 25, 26, 21, 27, 21