

Name _____

5-7B Lesson Master**Questions on SPUR Objectives**

See pages 320–323 for objectives.

USES Objective H

A neighborhood car dealership offers seven types of sport utility vehicles and mini vans. The table shows the type and the gas mileage of each vehicle.

Type of Vehicle	City Gas Mileage	Highway Gas Mileage	Number of Vehicles
Large SUV A	13	17	6
Large SUV B	15	17	9
Large SUV C	17	21	5
Mid-size SUV A	17	21	12
Mid-size SUV B	19	25	10
Small SUV	21	28	8
Mini van	17	23	20

1. What is the relative frequency of a vehicle that has a highway gas mileage of less than 23 miles per gallon? _____
2. What is the relative frequency of a vehicle that has a city gas mileage of more than 17 miles per gallon? _____

A survey on favorite types of pets was taken by students in Emmet's class.

Favorite Pet	Number of Students	Favorite Pet	Number of Students
cat	5	bird	0
dog	10	hamster/rodent	6
fish	7	reptile	2

3. What is the relative frequency that a favorite pet was *not* a reptile? _____
4. What is the relative frequency that a student's favorite pet was a bird? _____

Here are the responses to a music survey. The question posed was, "Does listening to music improve your mood?"

"always" – 198 responses

"rarely" – 45 responses

"often" – 244 responses

"never" – 27 responses

"sometimes" – 244 responses

5. What is the relative frequency that music improved the responders' mood at least some of the time? _____
6. If the "sometimes" responses were increased to 250, how would this affect the relative frequency in Question 5?

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USES Objective K

The table to the right lists the scores of a standardized test that was given to a group of students.

Test score	Percentile
84	90th
76	75th
73	50th
69	25th
62	10th

7. Eugenia's score on the test fell in the 75th percentile. What was her score?
- _____
8. Find possible values of a and b if 40% of the students have scores in the interval $a \leq \text{score} \leq b$. _____
9. Ralph earned a 67 on the test. Describe his score using the percentiles.
- _____

A shoe manufacturer surveyed 1,000 women between the ages of 21 and 35 regarding their shoe size.

Shoe Size	Percentile
10	90th
9	75th
8.5	50th
8	25th
7	10th

10. Describe the meaning of the 50th percentile?
- _____
- _____
11. Felicity wears a size $9\frac{1}{2}$. Describe her shoe size using percentiles.
- _____

Doctors use percentiles to monitor the growth of children. This table represents the growth of a 15-year-old male.

Height in Inches	Percentile
71	90th
69	75th
67	50th
65	25th
63	10th

12. Sergio's height falls in the 90th percentile. Lorenzo's height falls in the 50th percentile. Who is taller? Explain.
- _____
- _____
- _____
- _____

13. *Fill in the Blank.* About _____% of 15-year-old males are taller than 65 inches.