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Above-Average Snowfalls

By Samantha Henderson

- Find out how meteorologists use averages to measure snowfall

Richard Heim knows snow. He tracks the weather as a meteorologist at the National Climatic Data Center (NCDC), an organization that collects information about weather from all over the world. Working out of the NCDC's Asheville, North Carolina, office, Heim was in charge of a huge project that collected snow data from weather stations across the country. Unlike rain, snow doesn't fall to the ground evenly. "Snow can be blown by the wind," Heim told *DynaMath*, "and it can drift in one place and not in the other." That means you could have almost no snow in one spot, and a foot of it just 50 feet away!

Heim told us how to get around this problem when measuring snowfall. "You want to take a lot of measurements and take the average," he said. When you are looking at a set of numbers, the average (or mean) is a single value that gives you an idea of where the middle of that set of numbers is.

To find the average of a set of numbers, add them together and divide your sum by the number of numbers in the set. For instance, say Richard takes three snow measurements: 2 inches, 6 inches, and 7 inches. To find the average, add: $2 + 6 + 7 = 15$. Then divide: 15 divided by 3 = 5. The average is 5 inches. The NCDC would record that 5 inches of snow fell in that town.

It's time for you to find some averages. So let's get started--there's "snow" time to waste!

What To Do

- In each problem, we list a state and the town where that state's greatest one-day snowfall occurred, as well as the date of that storm.
- How much snow fell that day? The problem lists a set of sample measurements, like the ones the NCDC would take. Find the average of the measurements. The average tells you the actual amount of snow that fell there that day!

1. Florida: Milton, 3/6/1954

3 inches
4 inches
5 inches

Florida's greatest one-day snowfall: _____

2. Iowa: Fayette, 3/6/1959

5 inches
18 inches
40 inches

Iowa's greatest one-day snowfall: _____

3. North Carolina: Mount Mitchell, 1/28/1998

- 27 inches
- 35 inches
- 8 inches
- 42 inches

North Carolina's greatest one-day snowfall: _____

4. California: Giant Forest, 1/19/1933

- 55 inches
- 75 inches
- 15 inches
- 67 inches
- 88 inches

California's greatest one-day snowfall: _____

5. On February 17, 2003, 20 inches of snow fell on New York City. Say three measurements were taken, two of which were 8 inches and 29 inches. What was the third? _____

Testing 1-2-3

Now try this standardized-test type question!

Alaska's greatest one-day snowfall was at Thompson Pass on December 29, 1955. Find the average of 104 inches, 4 inches, 25 inches, 88 inches, and 89 inches to get the one-day total.

- A. 78 inches
- B. 62 inches
- C. 52 inches
- D. 310 inches

Think About It: What else besides wind might affect how much snow falls in one spot?

•Source: www.ncdc.noaa.gov

Answer Key

- 1. 4 inches
- 2. 21 inches
- 3. 28 inches
- 4. 60 inches
- 5. 23 inches

Testing 1-2-3: B

Think About It: Answers will vary. Here are two possible responses: Ground temperature and altitude.