

Objective 9

Determine the mean of a set of data.

Vocab:

Mean: The average. Add all numbers together, then divide by the number of numbers there are

Example 1:

PROBLEM

A charter fishing company in Alaska takes tourists into the Pacific Ocean to catch salmon. One day the tourists caught 9 Chinook salmon. The weights of these salmon, in pounds, are listed below. What is the mean weight of the salmon?

$$36\frac{1}{4}, 33\frac{1}{2}, 31\frac{3}{4}, 32\frac{1}{2}, 40\frac{1}{4}, 41\frac{1}{4}, 29\frac{3}{4}, 31\frac{3}{4}, 29$$

STEP 1

Write an addition problem to find the total weight of the 9 Chinook salmon.

$$36\frac{1}{4} + 33\frac{1}{2} + 31\frac{3}{4} + 32\frac{1}{2} + 40\frac{1}{4} + 41\frac{1}{4} + 29\frac{3}{4} + 31\frac{3}{4} + 29$$

STEP 2

Group the numbers to make the addition easier. Group the mixed numbers so they are paired to make whole numbers.

$$\left(\underbrace{33\frac{1}{2} + 32\frac{1}{2}}_{66}\right) + \left(\underbrace{36\frac{1}{4} + 31\frac{3}{4}}_{68}\right) + \left(\underbrace{40\frac{1}{4} + 29\frac{3}{4}}_{70}\right) + \left(\underbrace{41\frac{1}{4} + 31\frac{3}{4}}_{73}\right) + 29$$

STEP 3

Add the whole numbers.

$$66 + 68 + 70 + 73 + 29 = 306$$

The total weight of the salmon is 306 lb

STEP 4

Divide the total weight of the salmon by the number of salmon caught.

$$306 \div 9 = 34$$

The mean weight of the salmon is 34 lb.

Guided Practice:

The first 6 codfish caught on a commercial fishing boat were weighed. The weights of these 6 fish in kilograms are listed below. What is the mean of these weights?

5.2, 3.8, 4.3, 1.4, 4.3, 3.2

- [A] 3.7 kg [B] 1.4 kg [C] 4.05 kg [D] 4.3 kg

The first 6 codfish caught on a commercial fishing boat were weighed. The weights of these 6 fish in kilograms are listed below. What is the mean of these weights?

3.5, 2.8, 4.1, 3.6, 2.3, 2.3

Independent Practice:

A school recorded its students' heights at the beginning and end of the year. The changes in height in inches of six 14-year-old boys are listed below. What is the mean of the height increases?

$$1\frac{3}{4}, 2\frac{3}{4}, 1\frac{1}{4}, 3\frac{1}{4}, 3\frac{3}{4}, 3\frac{1}{4}$$

- [A] $2\frac{3}{4}$ in. [B] $3\frac{1}{4}$ in. [C] $2\frac{2}{3}$ in. [D] $3\frac{3}{4}$ in.

The ages in years of 5 students when they entered preschool are listed below. What is the mean of these ages?

$$3\frac{1}{6}, 3\frac{1}{6}, 4\frac{1}{6}, 2\frac{1}{6}, 3\frac{1}{6}$$

Additional Help:

<http://www.virtualnerd.com/middle-math/probability-statistics/mean-median-mode-range/mean-data-set>