Lesson 10-6

Problem

SPORTS The marketing department of a cable sports channel asked a random sample of 1500 of its 120,000 subscribers their favorite sport to watch on television. The results of this survey are shown in the table.

Sport	Number of Subscribers
Baseball	182
Basketball	370
Football	295
Gymnastics	96
Hockey	153
Tennis	68
Other	336

Predict how many of the 120,000 subscribers prefer basketball. Check your prediction.

Solve the Problem

The 370 people who chose basketball in the survey are about one-fourth of the subscribers. So, about one-fourth of the subscribers are expected to prefer basketball.

$120{,}000 \div 4 = 30{,}000$

First, to confirm your prediction, use the survey results to find P(basketball).

$$P(\text{basketball}) = \frac{370}{1500} \approx 0.247$$

Second, find how many subscribers might choose basketball.

P(basketball)	·	number of subscribers	=	predicted number of subscribers
0.247	·	120,000	=	29,640

The cable company can expect that about 29,640 of the subscribers will prefer basketball. The prediction of 30,000 is a very good prediction.