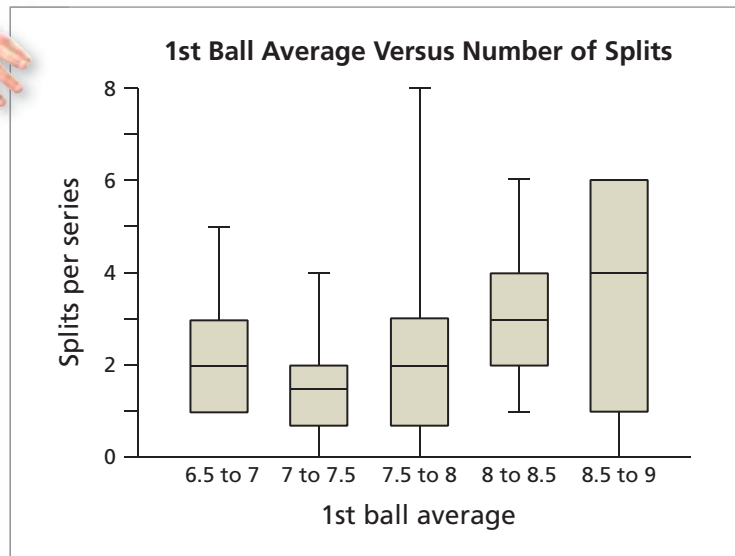EXAMPLE 6   **Analyzing Splits and Strikes**

The graphs show that the greater a bowler's skill, the tighter the range of locations where the bowling ball hits the pins.

Skill: **Low**   **Medium**   **High**

Professional bowlers almost always get 8, 9, or 10 pins down on their first ball. The box-and-whisker plots compare the number of splits a bowler gets to his or her first-ball average. What does this graph show?

1st Ball Average Versus Number of Splits

As of 2010, Pete Weber won 35 Professional Bowlers Association (PBA) Tour events, including 8 major titles. His 35th tour win on April 4, 2010, secured him the position of 3rd place on the all-time PBA Tour titles list.

SOLUTION

Overall, the box-and-whisker plots show that the median number of splits a bowler gets in a series (3 games) increases as his or her first-ball average increases. This makes sense because you cannot have a high pin average on the first ball unless you are hitting the head pin almost every time. The bad news is that when you hit the head pin, you have an increased likelihood of ending up with a split—a result in which the standing pins are "split" with a space between them.

✓ **Checkpoint**   Help at *Math*.and**YOU**.com

Bowling pins are numbered from 1 through 10. The "7-10 split" is considered to be the worst. List three other possible splits. Include a diagram with your answer.