**Home Run Hitters**

The following table lists the American League and National League top 20 home run leaders for the 2011 Season. *(Source: espn.go.com)*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **AL Homerun Leaders** | | | |  | **NL Homerun Leaders** | | | |
| [Rank](http://www.cbssports.com/mlb/stats/leaders/regularseason/yearly/AL/HIT/HR?&_1:col_1=1) | [Player](http://www.cbssports.com/mlb/stats/leaders/regularseason/yearly/AL/HIT/HR?&_1:col_1=2) | [Team](http://www.cbssports.com/mlb/stats/leaders/regularseason/yearly/AL/HIT/HR?&_1:col_1=3) | [HR](http://www.cbssports.com/mlb/stats/leaders/regularseason/yearly/AL/HIT/HR?&_1:col_1=7) |  | [Rank](http://www.cbssports.com/mlb/stats/leaders/regularseason/yearly/AL/HIT/HR?&_1:col_1=1) | [Player](http://www.cbssports.com/mlb/stats/leaders/regularseason/yearly/AL/HIT/HR?&_1:col_1=2) | [Team](http://www.cbssports.com/mlb/stats/leaders/regularseason/yearly/AL/HIT/HR?&_1:col_1=3) | [HR](http://www.cbssports.com/mlb/stats/leaders/regularseason/yearly/AL/HIT/HR?&_1:col_1=7) |
| 1 | Jose Bautista | TOR | 43 |  | 1 | Matt Kemp | LAD | 39 |
| 2 | Curtis Granderson | NYY | 41 |  | 2 | Prince Fielder | MIL | 38 |
| 3 | Mark Teixeira | NYY | 39 |  | 3 | Albert Pujols | STL | 37 |
| 4 | Mark Reynolds | BAL | 37 |  | 4 | Dan Uggla | ATL | 36 |
| 5 | Ian Kinsler | TEX | 32 |  | 5 | Mike Stanton | FLA | 34 |
|  | Jacoby Ellsbury | BOS | 32 |  | 6 | Ryan Braun | MIL | 33 |
|  | Adrian Beltre | TEX | 32 |  |  | Ryan Howard | PHI | 33 |
| 8 | Paul Konerko | CHW | 31 |  | 8 | Jay Bruce | CIN | 32 |
|  | Evan Longoria | TB | 31 |  | 9 | Lance Berkman | STL | 31 |
| 10 | Miguel Cabrera | DET | 30 |  |  | Justin Upton | ARI | 31 |
|  | J.J. Hardy | BAL | 30 |  |  | Michael Morse | WSH | 31 |
|  | Mike Napoli | TEX | 30 |  | 12 | Troy Tulowitzki | COL | 30 |
| 13 | David Ortiz | BOS | 29 |  | 13 | Joey Votto | CIN | 29 |
|  | Nelson Cruz | TEX | 29 |  | 14 | Carlos Pena | CHC | 28 |
|  | Mark Trumbo | LAA | 29 |  | 15 | Corey Hart | MIL | 26 |
|  | Josh Willingham | OAK | 29 |  |  | Alfonso Soriano | CHC | 26 |
| 17 | Robinson Cano | NYY | 28 |  |  | Aramis Ramirez | CHC | 26 |
| 18 | Adrian Gonzalez | BOS | 27 |  |  | Carlos Gonzalez | COL | 26 |
|  | Carlos Santana | CLE | 27 |  | 19 | Brian McCann | ATL | 24 |
| 20 | Adam Lind | TOR | 26 |  | 20 | Andrew McCutchen | PIT | 23 |

1. Compute the statistics below for homeruns. You may use a calculator to find the mean.

|  |  |  |
| --- | --- | --- |
| **American League** |  | **National League** |
| Mean= |  | Mean= |
| Median = |  | Median = |
| Mode = |  | Mode = |
| Minimum = |  | Minimum = |
| Maximum = |  | Maximum = |
| Range = |  | Range = |

1. Make a frequency table for the homeruns in each league.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **American League** | |  | **National League** | |
| Interval | Frequency | Interval | Frequency |
| 20 ≤ *x* < 24 |  | 20 ≤ *x* < 24 |  |
| 24 ≤ *x* < 28 |  | 24 ≤ *x* < 28 |  |
| 28 ≤ *x* < 32 |  | 28 ≤ *x* < 32 |  |
| 32 ≤ *x* < 36 |  | 32 ≤ *x* < 36 |  |
| 36 ≤ *x* < 40 |  | 36 ≤ *x* < 40 |  |
| 40 ≤ *x* < 44 |  | 40 ≤ *x* < 44 |  |

1. Use the frequency tables to make a histogram for each league.

|  |  |
| --- | --- |
| **American League Home Runs in 2011** | **National League Home Runs in 2011** |

1. Now have your calculator make the histograms. Use StatPlot 1 for the American League and StatPlot 2 for the National League.

What numbers did you use for the window?

XMin, = \_\_\_\_\_\_\_ YMin = \_\_\_\_\_\_\_\_

XMax, = \_\_\_\_\_\_\_ YMax = \_\_\_\_\_\_\_

XScl, = \_\_\_\_\_\_\_ YScl = \_\_\_\_\_\_\_\_

1. Change the value of XScl on your calculator. Describe what happens to the histograms.

**Classifying Histograms**

Some histograms may be classified by their shape. Three common shapes are shown below.

|  |  |  |
| --- | --- | --- |
| **Mound Shaped**    The bars are symmetric  about a line in the center. | **Skewed Right**    A tail extends to the right of the highest bar. | **Skewed Left**    A tail extends to the left of the highest bar. |

1. Which of the home run histograms is mound shaped?
2. Which of the home run histograms has a skewed shape?
3. In a mound shaped distribution, the mean and the median are about the same. Is this true for the histogram you found in question (6)? Explain.
4. In skewed distribution, the mean is usually closer to the end of the tail than is the median. Is this true for the histogram you found in question (7)? Explain.
5. Based on the data, which league had the stronger home run leaders in 2011? Base your answer on the statistics and the histograms.