**4-2d Linear Models in the Real World Problem Set**

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| **Olympic 100-meter Winning Times**  The winning Olympic times for the 100-meter run from 1928 to 1988 are shown in the table.   |  |  | | --- | --- | | Year | Winning time (seconds) | | 1928 | 12.2 | | 1936 | 11.5 | | 1948 | 11.9 | | 1952 | 11.5 | | 1960 | 11.0 | | 1964 | 11.4 | | 1972 | 11.07 | | 1976 | 11.08 | | 1980 | 11.6 | | 1984 | 10.97 | | 1988 | 10.54 |   Prediction: What will the winning time be in the 100-meter dash in the 2016 Olympics (use 116 as year)? | **Theme Park Attendance**  The table below shows theme park attendance over the years   |  |  | | --- | --- | | Year | Attendance (millions) | | 1997 | 300 | | 1998 | 300 | | 1999 | 309 | | 2000 | 317 | | 2001 | 319 | | 2002 | 324 | | 2003 | 322 | | 2004 | 328 | | 2005 | 335 | | 2006 | 335 | | 2007 | 341 |   Prediction: How many people will attend theme parks in 2015? | **Fast Food Hamburgers**  The table below shows the relationship between calories and fat in various fast-food hamburgers.   |  |  |  | | --- | --- | --- | | Hamburger | Calories | Fat (g) | | A | 720 | 46 | | B | 530 | 30 | | C | 510 | 27 | | D | 500 | 26 | | E | 305 | 13 | | F | 410 | 20 | | G | 440 | 25 | | H | 320 | 13 | | I | 598 | 26 |   Prediction: If a deluxe hamburger has 900 calories, about how many grams of fat would the hamburger contain? |
| **Median NFL Salary**  The median base salary for national football league players is shown in the table.   |  |  | | --- | --- | | Year | Salary | | 1982 | $98,000 | | 1989 | $200,000 | | 1991 | $250,000 | | 1994 | $300,000 | | 1999 | $455,000 | | 2006 | $625,000 | | 2008 | $720,000 | | 2009 | $770,000 |   Prediction: What will the median base salary be in 2015 (use 115 as year)? | **Population vs. Licensed Drivers**  Macintosh HD:Users:jmricha7:Desktop:Picture 1.pngPopulation of a State and Number of Licensed Drivers in that State  Prediction: The population of Oregon is approximately 3 million. About how many drivers live in Oregon? | **Temperature vs. Latitude**   |  |  |  | | --- | --- | --- | | **City** | **Latitude (°)** | **Temp. (F°)** | | **Bismarck** | 46.8 | 64.3 | | **Sioux Falls** | 43.5 | 68.4 | | **Omaha** | 41.2 | 73.0 | | **Kansas City** | 39.1 | 76.1 | | **Wichita** | 37.7 | 73.6 | | **Oklahoma City** | 35.5 | 77.0 | | **Dallas** | 33.2 | 82.0 | | **Houston** | 29.8 | 80.6 |   The average June temperatures and latitudes of several cities in the US are shown in the table.  Prediction: What would the approximate average high in June be for a city with a latitude of 40°? |