**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 StatePrediction: 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°? |