Math 91 – Quadratic Modeling

Create a quadratic function in **vertex form** that does the best to model the following sets of data.
(The following data is all from USA Today, collected by a Math Prof in CA, Jay Lehmann.)

1. (Use $x=0$ at 1930.)

Year	Annual Recreational Visits (millions)
1930	7
1940	17
1950	27
1960	88
1970	175
1980	230
1990	255
1996	341

Table 17: Visits to National Forests (*Source: USA Today*)

2. (Use $x=1,2,3,4,5$ to represent the groups.)

Age Group	Percent
18-25	75
26-35	73
36-45	63
46-55	56
over 55	35

Table 22: Percent Admitting to Running Red Lights (*Source: USA Today*)

3. (Use $x=0$ at 1990.)

Year	Percent
1994	3
1995	8
1996	14
1997	27
1998	51
1999	63

Table 19: Percent of Classrooms with Internet Access (Update to p.211 Table #29) (*Source: USA Today*)

4. (Use $x = 0$ at 1980.)

Year	Violent Crimes
1988	327
1990	424
1992	488
1994	527
1996	460
1998	370

Table 21: Juvenile Violent-Crime Arrests (*Source: USA Today*)

5. (Use $x = 0$ at 1980.)

Year	Number of Deaths Per 100,000 men
1980	205.3
1985	212.6
1989	217.6
1993	212.1
1997	201.9

Table 23: Cancer Deaths of Men (*Source: USA Today*)

6. (Use $x = 0$ at 2000.)

ADOPTIONS TO THE UNITED STATES

1999: 15,719
2000: 18,857
2001: 19,647
2002: 21,378
2003: 21,654
2004: 22,990
2005: 22,734
2006: 20,680
2007: 19,609
2008: 17,475
2009: 12,753
2010: 11,059

SOURCE: U.S. DEPARTMENT OF STATE