

THE WORLD-RECORD FOR THE MILE!

PROBLEM STATEMENT:

4:14.4	John Paul Jones	USA	31.5.1913	Cambridge, Mass.
4:12.6	Norman Taber	USA	16.7.1915	Cambridge, Mass.
4:10.4	Paavo Nurini	FIN	23.8.1923	Stockholm
4:09.2	Jules Ladoumegue	FRA	4.10.1931	Paris
4:07.6	Jack Lovelock	NZL	15.7.1933	Princeton, NJ.
4:06.8	Glen Cunningham	USA	16.6.1934	Princeton, NJ.
4:06.4	Sydney Wooderson	GBR	28.8.1937	Motspur Park
4:06.2	Gunder Hagg	SWE	1.7.1942	Gothenburg, Swed.
4:06.2	Arne Andersson	SWE	10.7.1942	Stockholm
4:04.6	Gunder Hagg	SWE	4.9.1942	Stockholm
4:02.6	Arne Andersson	SWE	1.7.1943	Gothenburg
4:01.6	Arne Andersson	SWE	18.7.1944	Malmo
4:01.4	Gunder Hagg	SWE	17.7.1945	Malmo
3:59.4	Roger Bannister	GBR	6.5.1954	Oxford
3:58.0	John Landy	AUS	21.6.1954	Turku, Finland
3:57.2	Derek Ibbotson	GBR	19.7.1957	London
3:54.5	Herbe Elliott	AUS	6.8.1958	Dublin
3:54.4	Peter Snell	NZL	27.1.1962	Wanganui
3:54.1	Peter Snell	NZL	17.11.1994	Auckland
3:53.6	Michel Jazy	FRA	9.6.1965	Rennes
3:51.3	Jim Ryun	USA	17.7.1966	Berkely, Calif.
3:51.1	Jim Ryun	USA	23.6.1967	Bakersfield, Calif.
3:51.0	Filbert Bayl	TAN	17.5.1975	Kingston, Jamaica
3:49.4	John Walker	NZL	12.8.1975	Gothenburg, Swed.
3:49.0	Seb Coe	GBR	17.7.1979	Oslo

Athletes continue to run the mile faster and faster as the years go by, but a mile, say, in one minute, would seem impossible.

1 . Using the data given:

- (a) Neatly and accurately, plot the time against the year.
- (b) Join the points plotted using a line or curve of best **fit**.

Note: Your graph should occupy a whole page. Range of years for the horizontal axis should be 1912 to 2000 and for the vertical axis, range of time 3 min 10 sec (3: 1 0.0) to 4 min 16 sec.

2. Use your graph to answer the following:

(a) Estimate when it is likely that the mile could be run in:

(i) 3:40

(ii) 3:30

(b) Is it reasonable to assume that a 3 minute mile could one day be achieved? Does your graph suggest that there is a limit to the fastest time which could ever be achieved?

Note: You should provide a detailed written answer using your graph to help in your solutions to these questions. Your graph can be marked to demonstrate how you have obtained answers.