



STUDENT VERSION SPREAD OF OIL SLICK

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STATEMENT

An oil slick spreads at sea. From time to time, but irregularly, a helicopter is dispatched to photograph the oil slick. On each trip, the helicopter arrives over the slick, the pilot takes a picture, waits 10 minutes, takes another, and heads home. On each of seven trips the size (in area) of the slick is measured from both photographs.

Size of Slick (square miles)	
Initial Observation	10 min. later
1.047	1.139
2.005	2.087
3.348	3.413
5.719	5.765
7.273	7.304
8.410	8.426
9.117	9.127

Table 1. Data on spread of an oil slick.

- Build a model for the size of the oil slick at time t .
- Predict the future size of the oil slick, say at $t = 10$ min, $t = 20$ min, $t = 120$ min.
- Plot your model of the size of the oil slick as a function of time.
- Find the time at which the oil slick is 8 square miles.
- Determine the time of each of the observations for the first, third, fifth, and seventh initial observations.