Sec 4.2

Applications

The percentage of adult height attained by a boy who is x years old can be modeled by

age

$f(x) = 29 + 48.8 \log (x+1)$

percent

where x represents the boy's age (from 5-15) and f(x) represents the percentage of adult height. Approximately what percentage of adult height has a boy attained at age 8?

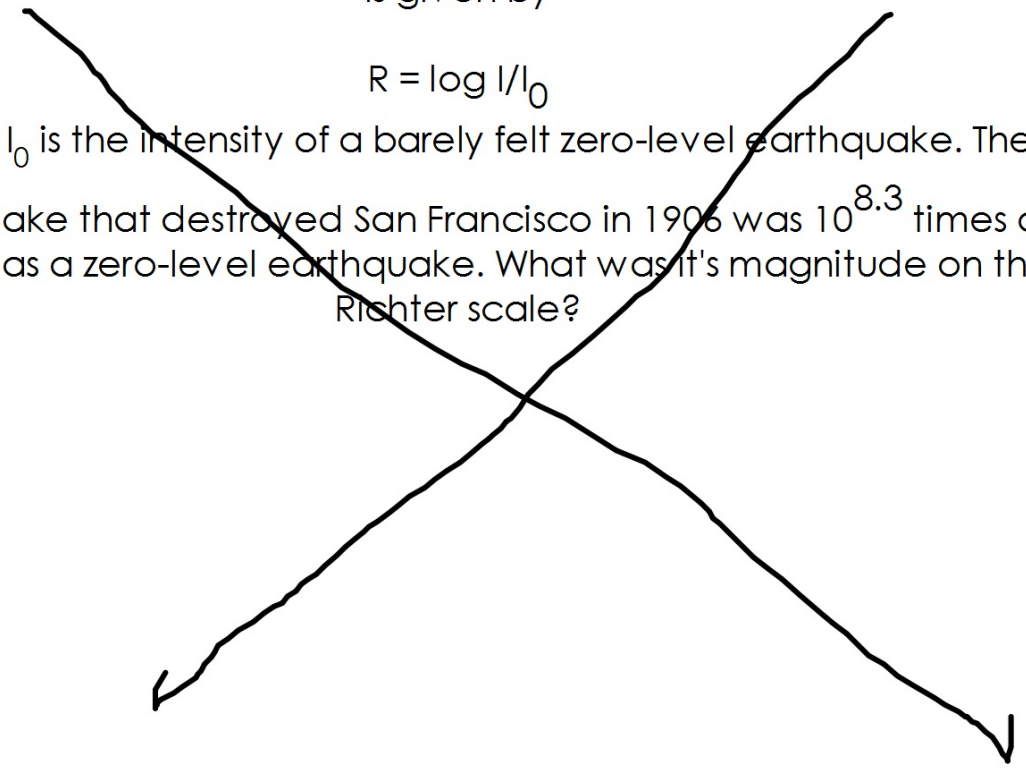
$= 29 + 48.8 \log (8+1)$

$\approx 75.5\%$

The magnitude, R, on the Richter scale of an earthquake of intensity I is given by

$$R = \log I/I_0$$

where $I_0$ is the intensity of a barely felt zero-level earthquake. The earthquake that destroyed San Francisco in 1906 was $10^{8.3}$ times as intense as a zero-level earthquake. What was it's magnitude on the Richter scale?



When the outside air temperature is anywhere from 72° to 96° Fahrenheit, the temperature in an enclosed vehicle climbs by 43° the first hour. The function f(x) = 13.4 ln x - 11.6 models the temperature increase, f(x), in degrees Fahrenheit, after x minutes. Use the function to find the temperature increase after 50 minutes.

$f(x) = 13.4 \ln 50 - 11.6$

$40.82 \approx 41°$ increase

113. 95.4%

114. 89.2%

115. a. 25.5%

b. 24.2%

Suggested Practice
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#'s
113-116,
119a, b

116. a. 14.8%

b. 14.0%

119. a. 88

b. 71.5

63.9

58.8

55

52

49.5