

2.4

⑬ $f(6) = 1.15(1.014)^6 = 1.25$ billion people

$$f'(6) \approx \frac{f(6.001) - f(6)}{6.001 - 6} = \frac{1.15(1.014)^{6.001} - 1.15(1.014)^6}{0.001} = 0.0174 \text{ billion people per year}$$

What do these 2 numbers tell you about the population of China?

The population of China was about 1,250,000,000 people in 1999 & growing at a rate of about 17,400,000 people per year at that time.

mistakes

- give units
- explain what answers mean

2.5

(15) Avg. acceleration = $\frac{\text{Change in Velocity}}{\text{Time}} = \frac{v(1) - v(0)}{1} = \frac{30 - 0}{1} = \boxed{30 \text{ ft/sec}^2}$
for $0 \leq t \leq 1$

Avg. acceleration = $\frac{52 - 30}{2 - 1} = \boxed{22 \text{ ft/sec}^2}$
for $1 \leq t \leq 2$