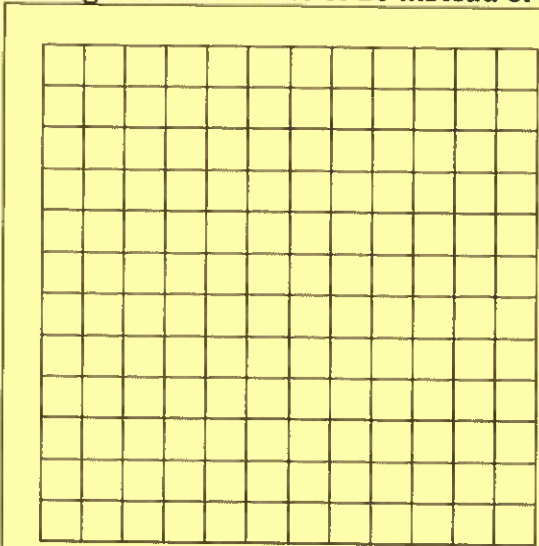


Name Answers

Chapter 6 Polynomial Application Problems

1. $w(n) = 0.1n^3 - 0.6n^2 + 110$ represents the weight of a person after n days of becoming sick. Graph the function when $0 \leq n \leq 6$. The w axis will need to be changed so it's a scale of 10 instead of 1.



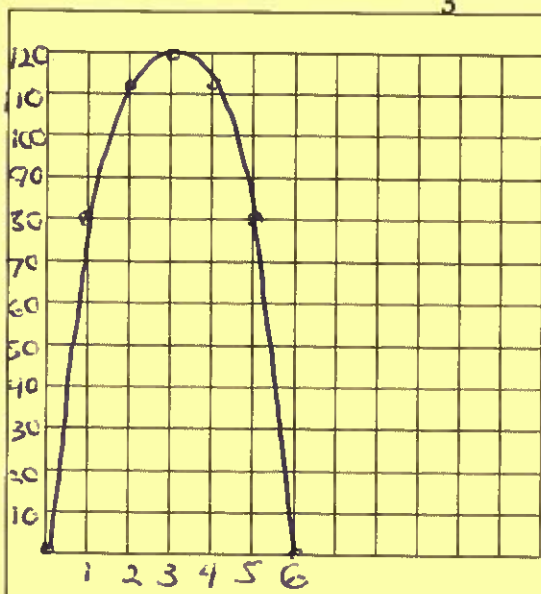
What is the person's starting weight?

What is the lowest weight the person will ever reach? How many days were they sick when they reached their lowest weight?

How many days does it take for the person to get back to their original weight?

2. To determine safe dosage of a medication, researchers measure the concentration of a medication in a patient's bloodstream. The function that models the concentration in parts per million at x hours after the medication is administered is below. Graph the function when $0 \leq x \leq 6$

$$C = \frac{-2}{3}x^4 + 8x^3 - \frac{130}{3}x^2 + 116x$$



What is the maximum value of C on this interval? What is the practical significance of the maximum?

after 3 hours the concentration of medication is at 120 parts per million which is the max

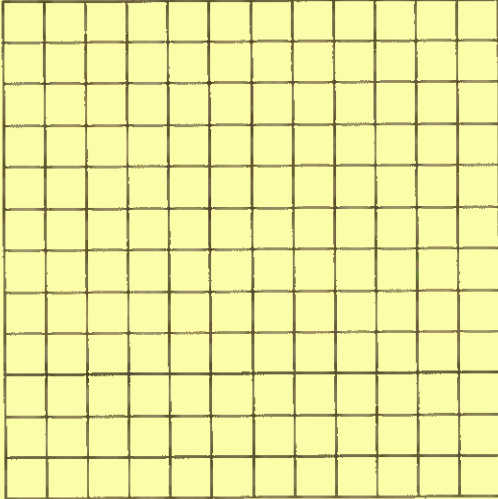
Explain the practical significance of the x and C intercepts on the interval $0 \leq x \leq 6$.

the concentration is 0 parts per million at 0 and 6 hours

How many hours is the concentration about 80 parts per million?

at 1 and 5 hours the concentration is 80 parts per million

3. The polynomial $y = 1600x^3 + 1200x^2 + 800x$ represents your savings, with interest, from a summer job after three years. The annual interest rate equals $1 - x$. Graph the function when $0 \leq x \leq 1$.



What is the practical significance of the x and y intercepts on the interval $0 \leq x \leq 1$.

If the x is .2, then what is the annual interest rate? How much money will be saved at that interest rate?

What is the maximum amount that is saved on that interval? What is the x value? What is the annual interest rate?

What is the x value when approximately \$300 is your savings? What is the annual interest rate for that x value?