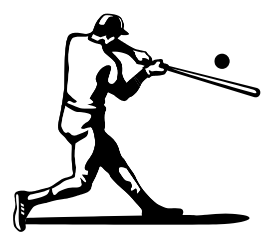
1) The population of a certain city was 200,000 in 2010, and the observed doubling time for the population is 16 years.

(a) Find an exponential model for the population of the form $n(t) = n_0 e^{rt}$ where t equals the years after 2010.

(b) What is the population in the year 2020?

(c) Estimate when the population will reach 500,000.

2) The path of a baseball can be described by the following function:
$h(x) = -0.005x^2 + 2x + 3.5$ Where h(x) is the height of the ball (in feet) directly above a point that is x feet from home plate.



(a) What was the maximum height of the ball?

(b) The center field fence is 20 feet high and 390 feet away from home plate. Will the ball clear the fence? If so, by how much? If not, where does it land?

3) Function ‘f’ represents the number of people in a City Park (N) versus the time of day (T) from noon (T = 0) to 9:30 pm (T = 9.5).

(a) Give the independent variable ________________________

(b) What does f(7) = 8 mean in terms of this function?____________________

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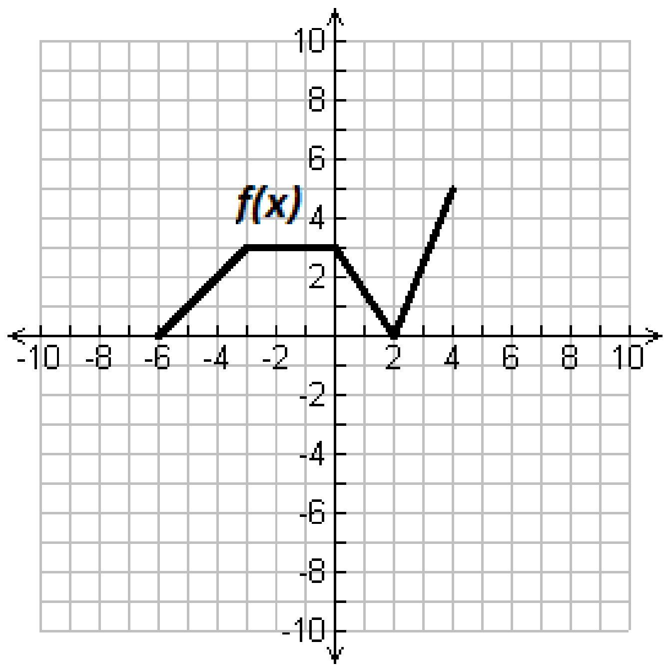
(c) Which of these correctly describes this relationship? (Circle one)

(i) N = f(T) (ii) y = f(x) (iii) T = f(N) (iv) N = f(x) (v) $N = 3T^2 + 4$

4) Given the graph of $f(x)$ (shown here), sketch a graph $f(-x) - 3$ on the same set of axes.



	Class Grade	Q1	Q2	Q3	Q4
1	B	N	Y	Y	N
2	D	N	Y	N	N
3	W				
4	B	Y	Y	Y	N
5	A	Y	Y	Y	N
6	A	Y	Y	Y	Y
7	A	N	N	Y	N
8	D	N	N	N	N
9	B	N	Y	Y	N
10	F	N	N	N	N
11	D	N	Y	Y	N
12	W				
13	F				
14	A	Y	Y	N	N
15	C	N	N	N	N
16	C	N	N	Y	N
17	A	Y	N	Y	Y
18	F				
19	B	N	N	Y	N
20	B	N	N	Y	N
21	A	Y	Y	Y	N
22	D	N	N	N	N
23	C	N	N	N	N
24	A	Y	Y	N	N
25	D	Y	Y	Y	N
26	C+	N	Y	Y	N
	Total No	14	10	8	20
	Total Yes	8	12	14	2
	Total NA	4	4	4	4
	Avg Y	36%	55%	64%	9%