Time, t	Number of Bacteria in the Sample
0	100
1	220
2	400
3	780
4	1,550
5	3,100
6	6,000
7	12,800
8	25,000

Time (hours)
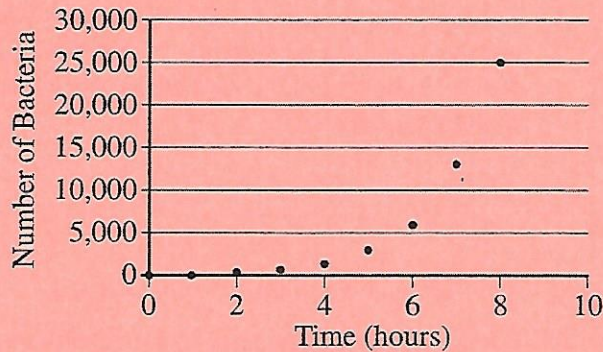
17. A scientist estimated the number of bacteria in a sample every hour and recorded the estimates in the table above. Then the scientist used the data to create the scatterplot above. Based on the information, which of the following functions best models the number of bacteria, $f(t)$, at time t, in hours?

(A) $f(t) = 100(2^t)$
(B) $f(t) = 100 + 2t$
(C) $f(t) = t^2 + 220t + 100$
(D) $f(t) = 120 \log(t+1)$

$$2x + 3y = 5$$
$$5x - 2y = -16$$

18. In the solution of the system of linear equations shown above, what is the value of x?

19. The width of a rectangular garden is x feet. If 300 feet of fencing is needed to enclose the garden, which of the following represents the length of the garden, in feet?

(A) $300 - x$
(B) $300 - 2x$
(C) $150 - x$
(D) $150 - 2x$

PURCHASE TAX

Purchase Price	Tax Rate
$0 to $200,000	0%
$200,001 to $250,000	3%
$250,001 to $350,000	4%
$350,001 to $400,000	4.5%
$400,001 to $650,000	7%
$650,001 and over	9%

20. In country I when a house is sold to a first-time buyer, a purchase tax is paid based on the tax rate table above. Last week Liam, a first-time buyer, purchased a house for $275,000. How much purchase tax did he pay?

(A) $8,250
(B) $11,000
(C) $12,375
(D) $13,750