Name: _____ **Class:** _____ **Date:** _____ **ID: A**

Linear Models

Multiple Choice
Identify the choice that best completes the statement or answers the question.

____ 1. You had $125 when you went to the fair. You spend $15 to enter the fair and $20 on food. Rides at the fair cost $3.00 per ride. Which function can be used to determine how much money you have left over after x rides?

a. $f(x) = -3x - 90$
b. $f(x) = -35 + 125$
c. $f(x) = -3x + 90$
d. $f(x) = -3x - 90$

____ 2. A cell phone plan has a monthly cost that is shown in the table below. What is the correct statement regarding the average rate of change during the 40-minute time of talk?

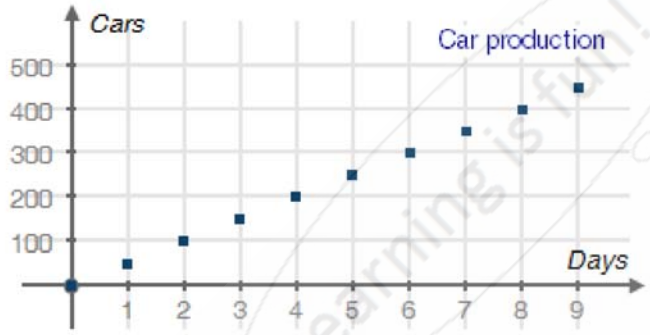
Total talk time minutes	Monthly cost for use
0	$13.60
10	$14.50
20	$15.40
30	$16.30
40	$17.20

a. The average rate of change is $0.09, meaning that for each minute of talk time, the monthly bill increases by $0.09.
b. The average rate of change is $0.99, meaning that for every ten minutes of talk time, the monthly bill increases by $0.99.
c. The average rate of change is $0.09, meaning that for every ten minutes of talk time, the bill increases by $0.09.
d. The average rate of change is $0.99, meaning that for each minute of talk time, the monthly bill increases by $0.09.

___ 3. A school puts on a play. The play costs $936 in expenses. The students charge $4.00 for tickets. There will be one performance of the play in an auditorium that seats 500 people. What is the domain of the function that shows a profit for the play after ticket sales exceed expenses?

a. The domain is all real numbers from 235 to 500.
b. The domain is all real numbers from negative 936 to positive 2,000.
c. The domain is all integers from negative 936 to positive 2,000.
d. The domain is the integers from 235 to 500.

___ 4. The graph shows the production of cars per day at a factory during a certain period of time. What is the domain of this function during this period?



a. The domain is all real numbers 0 through 9.
b. The domain is all positive real numbers.
c. The domain is all positive integers.
d. The domain is all integers 0 through 9.

___ 5. Your buddy is running a 8-kilometer race. He runs 1 kilometer every 4 minutes. Select the function that describes his distance from the finish line after x minutes.

a. $f(x) = \frac{1}{4}x + 4$
b. $f(x) = -\frac{1}{8}x + 4$
c. $f(x) = \frac{1}{8}x + 8$
d. $f(x) = -\frac{1}{4}x + 8$

____ 6. You attend an amusement park with your buddy. You buy an all-ride pass for $20, shown as f($x$). Instead of getting a pass, your buddy decides to pay $5 for each ride they take, shown as g(x). What function shows the correct combination of these two functions to represent the total cost of attending the amusement park that day, shown as h(x)?

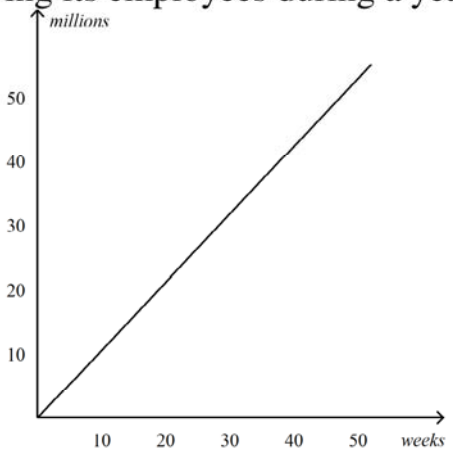
a. $f(x) = 20,\ g(x) = 5x,\ h(x) = 5x + 20$
b. $f(x) = 20x,\ g(x) = 5,\ h(x) = 20x + 5$
c. $f(x) = 20x,\ g(x) = 5x,\ h(x) = 20x + 5x$
d. $f(x) = 20,\ g(x) = 5,\ h(x) = 5 + 20$

____ 7. A State Park charges $5 per car plus $1 per person as an admission fee. The total charged for a car with x people is $f(x) = x + 1$. How will the graph of this function change if the per car charge is changed to $6 per car?

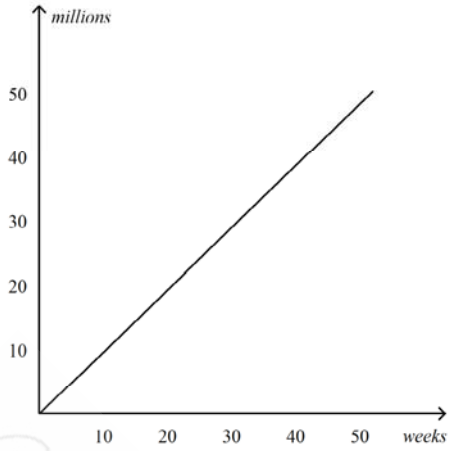
a. The line will shift vertically up by $1.
b. The line will shift vertically down by $6.
c. The line will shift vertically down by $1.
d. The line will shift vertically up by $6.

____ 8. A manufacturing company employs 1,000 people. The average weekly salary of each employee is $870. Select the graph that correctly shows the total cost to the company of paying its employees during a year.

a.

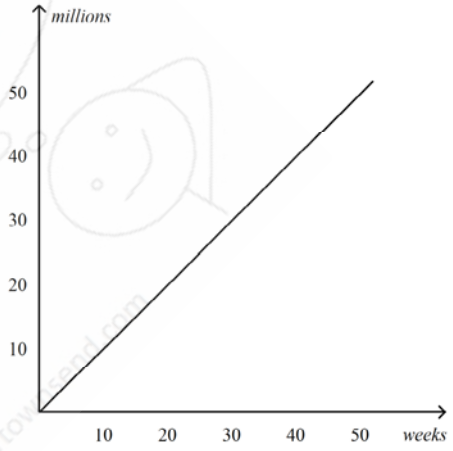


c.



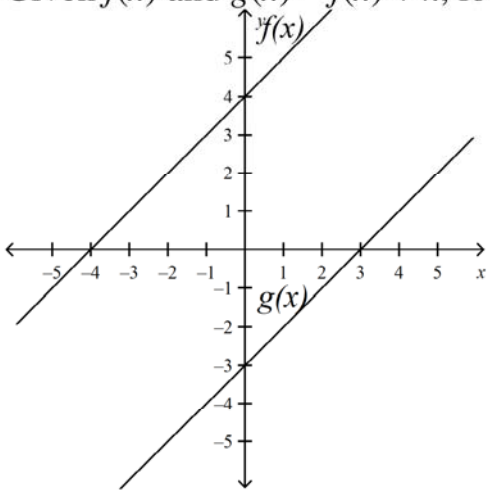
b.

d.



Numeric Response

9. Given $f(x)$ and $g(x) = f(x) + k$, look at the graph below and determine the value of k.



Linear Models
Answer Section

MULTIPLE CHOICE

1.	ANS: C	PTS: 1	REF: 3.5
2.	ANS: A	PTS: 1	REF: 3.5
3.	ANS: D	PTS: 1	REF: 3.5
4.	ANS: D	PTS: 1	REF: 3.5
5.	ANS: D	PTS: 1	REF: 3.5
6.	ANS: A	PTS: 1	REF: 3.5
7.	ANS: A	PTS: 1	REF: 3.5
8.	ANS: B	PTS: 1	REF: 3.5

NUMERIC RESPONSE

9. ANS: –7

PTS: 1 REF: 3.5