

Linear Models**Multiple Choice**

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

- _____ 1. You had \$115 when you went to the fair. You spend \$5 to enter the fair and \$15 on food. Rides at the fair cost \$2.00 per ride. Which function can be used to determine how much money you have left over after x rides?

- a. $f(x) = -2x + 95$ c. $f(x) = -20 + 115$
b. $f(x) = -2x - 95$ d. $f(x) = -2x - 95$

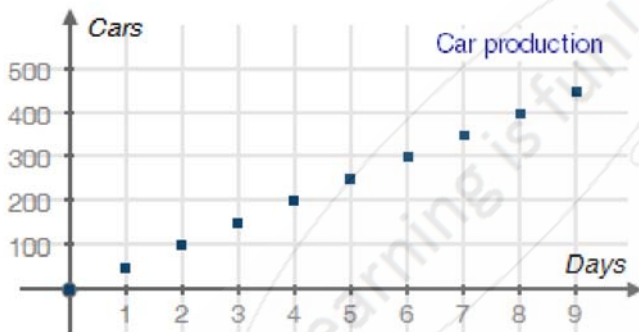
- _____ 2. A cell phone plan has a monthly cost that is shown in the table below. What is the correct statement regarding the average rate of change during the 40-minute time of talk?

Total talk time minutes	Monthly cost for use
0	\$12.35
10	\$13.05
20	\$13.75
30	\$14.45
40	\$15.15

- a. The average rate of change is \$0.77, meaning that for every ten minutes of talk time, the monthly bill increases by \$0.77.
b. The average rate of change is \$0.07, meaning that for each minute of talk time, the monthly bill increases by \$0.07.
c. The average rate of change is \$0.07, meaning that for every ten minutes of talk time, the bill increases by \$0.07.
d. The average rate of change is \$0.77, meaning that for each minute of talk time, the monthly bill increases by \$0.07.

- _____ 3. A school puts on a play. The play costs \$904 in expenses. The students charge \$4.00 for tickets. There will be one performance of the play in an auditorium that seats 600 people. What is the domain of the function that shows a profit for the play after ticket sales exceed expenses?
- The domain is the integers from 227 to 600.
 - The domain is all real numbers from negative 904 to positive 2,400.
 - The domain is all integers from negative 904 to positive 2,400.
 - The domain is all real numbers from 227 to 600.

- _____ 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?



- The domain is all integers 0 through 9.
 - The domain is all real numbers 0 through 9.
 - The domain is all positive integers.
 - The domain is all positive real numbers.
- _____ 5. Your buddy is running a 6-kilometer race. He runs 1 kilometer every 5 minutes. Select the function that describes his distance from the finish line after x minutes.

a. $f(x) = -\frac{1}{6}x + 5$

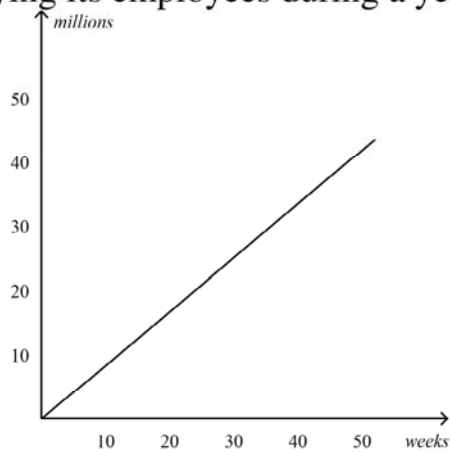
c. $f(x) = \frac{1}{6}x + 6$

b. $f(x) = \frac{1}{5}x + 5$

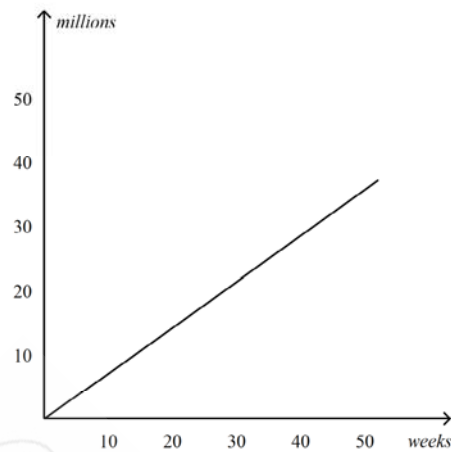
d. $f(x) = -\frac{1}{5}x + 6$

- _____ 6. You attend an amusement park with your buddy. You buy an all-ride pass for \$30, 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. $f(x) = 30x$, $g(x) = 5$, $h(x) = 30x + 5$
 - b. $f(x) = 30x$, $g(x) = 5x$, $h(x) = 30x + 5x$
 - c. $f(x) = 30$, $g(x) = 5$, $h(x) = 5 + 30$
 - d. $f(x) = 30$, $g(x) = 5x$, $h(x) = 5x + 30$
- _____ 7. A State Park charges \$4 per car plus \$1 per person as an admission fee. The total charged for a car with x people is $f(x) = x + 3$. How will the graph of this function change if the per car charge is changed to \$7 per car?
- a. The line will shift vertically up by \$3.
 - b. The line will shift vertically down by \$7.
 - c. The line will shift vertically up by \$7.
 - d. The line will shift vertically down by \$3.

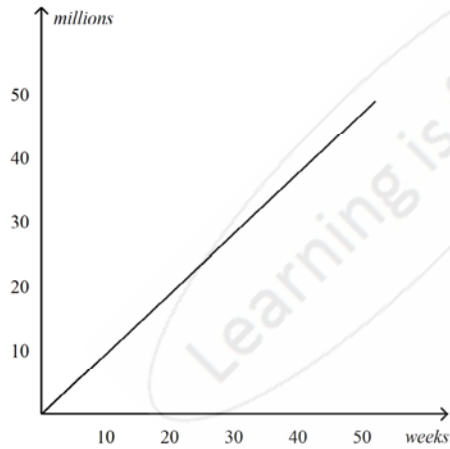
8. A manufacturing company employs 1,000 people. The average weekly salary of each employee is \$840. Select the graph that correctly shows the total cost to the company of paying its employees during a year.



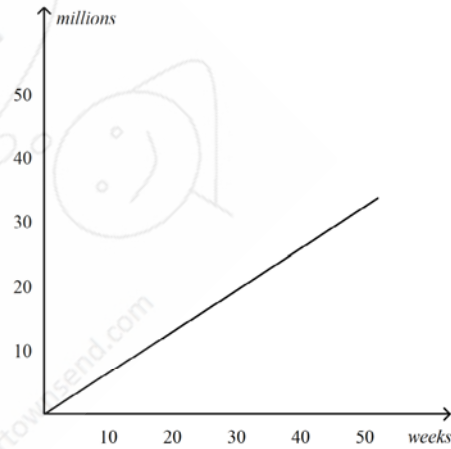
a.



b.



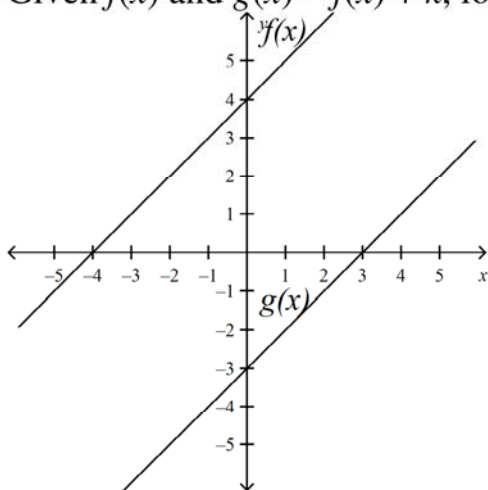
c.



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

NUMERIC RESPONSE

9. ANS: -7
PTS: 1 REF: 3.5

