Linear models

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You had $105 when you went to the fair. You spend $15 to enter the fair and $15 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. $f(x) = -3x - 75$ c. $f(x) = -3x - 75$
b. $f(x) = -30 + 105$ d. $f(x) = -3x + 75$

You had $100 when you went to the fair. You spend $10 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. $f(x) = -2x + 75$ c. $f(x) = -25 + 100$
b. $f(x) = -2x - 75$ d. $f(x) = -2x - 75$

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	$10.90
10	$12.10
20	$13.30
30	$14.50
40	$15.70

a. The average rate of change is $0.12, meaning that for every ten minutes of talk time, the bill increases by $0.12.
b. The average rate of change is $1.32, meaning that for each minute of talk time, the monthly bill increases by $0.12.
c. The average rate of change is $1.32, meaning that for every ten minutes of talk time, the monthly bill increases by $1.32.
d. The average rate of change is $0.12, meaning that for each minute of talk time, the monthly bill increases by $0.12.

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A school puts on a play. The play costs $711 in expenses. The students charge $3.00 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?

a. The domain is all real numbers from 238 to 600.
b. The domain is all real numbers from negative 711 to positive 1,800.
c. The domain is the integers from 238 to 600.
d. The domain is all integers from negative 711 to positive 1,800.

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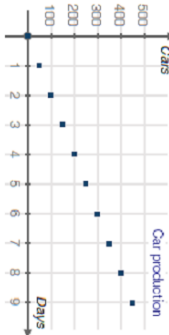
a. The domain is all positive integers.
b. The domain is all real numbers 0 through 9.
c. The domain is all integers 0 through 9.
d. The domain is all positive real numbers.

Your buddy is running a 7-kilometer race. He runs 1 kilometer every 5 minutes. Select the function that describes his distance from the finish line after x minutes.

a. $f(x) = \frac{1}{7}x + 7$

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

c. $f(x) = -\frac{1}{7}x + 5$

d. $f(x) = -\frac{1}{5}x + 7$

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 $2 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. $f(x) = 30$, $g(x) = 2x$; $h(x) = 2x + 30$
b. $f(x) = 30x$, $g(x) = 2$, $h(x) = 30x + 2$
c. $f(x) = 30$, $g(x) = 2$, $h(x) = 2 + 30$
d. $f(x) = 30x$, $g(x) = 2x$; $h(x) = 30x + 2x$

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