Algebra Quick Quiz
Daily Quiz 12072021

Question 1.

Eli, a mechanic, earns $20 for every oil change he performs and $120 for every tune-up. He needs to earn over $2,100 today to be able to pay the rent for his business and still have some money left over.

Select the inequality in standard form that describes this situation. Use the given numbers and the following variables.

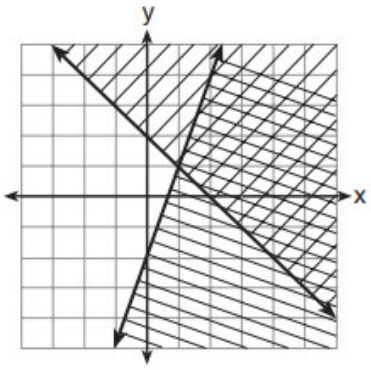
x = the number of oil changes Eli will do today

y = the number of tune-ups Eli will do today

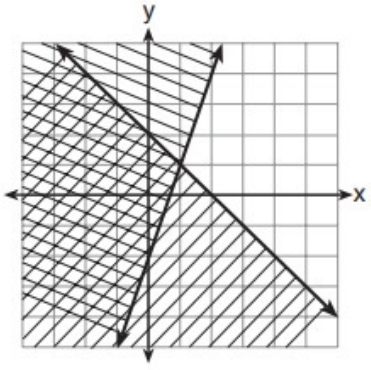
- $120x + 20y \geq 2{,}100$
- $120x + 20y > 2{,}100$
- $20x + 120y \geq 2{,}100$
- $20x + 120y > 2{,}100$

Question 2. Given: $y + x > 2$
$y \leq 3x - 2$

Which graph shows the solution of the given set of inequalities?



(1)



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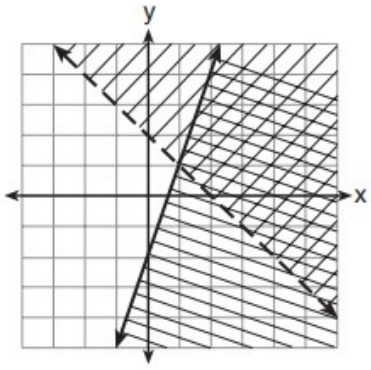

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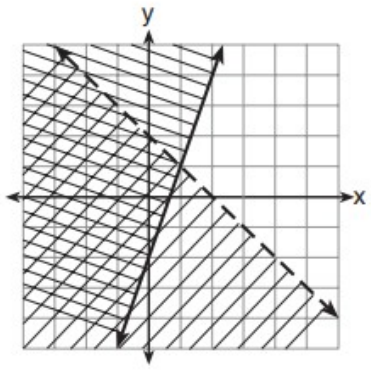


(4)

Question 3.

Which of the following is a solution of the equation below?

$$(k - 4)(k + 5) = 0$$

A. –9

B. –1

C. 4

D. 5

Question 4.

Solve $4x^2 - 10x + 6 = 0$

A. $x = -\frac{1}{2}$ or $x = 3$

B. $x = -1$ or $x = \frac{3}{2}$

C. $x = \frac{3}{4}$ or $x = 2$

D. $x = \frac{3}{2}$ or $x = 1$

Question 5.

This parabola shows the relationship between the amount of money a baker earns from bread sales each day and the price the baker charges for each loaf of bread.

Based on the parabola, what price should the baker charge for each loaf of bread to earn the greatest amount of money from bread sales each day?

Question 6.

Officials in a town use a function, C, to analyze traffic patterns. $C(n)$ represents the rate of traffic through an intersection where n is the number of observed vehicles in a specified time interval. What would be the most appropriate domain for the function?

(1) $\{\ldots -2, -1, 0, 1, 2, 3, \ldots\}$ (3) $\left\{0, \frac{1}{2}, 1, 1\frac{1}{2}, 2, 2\frac{1}{2}\right\}$

(2) $\{-2, -1, 0, 1, 2, 3\}$ (4) $\{0, 1, 2, 3, \ldots\}$

Question 7.

What are the solutions of the equation below?

$$5x(x + 8) = 0$$

A. $x = -5;\ x = -8$

B. $x = 0;\ x = -8$

C. $x = 0;\ x = 8$

D. $x = 5;\ x = 8$

Question 8.

A company that manufactures radios first pays a start-up cost, and then spends a certain amount of money to manufacture each radio. If the cost of manufacturing r radios is given by the function $c(r) = 5.25r + 125$, then the value 5.25 best represents

(1) the start-up cost

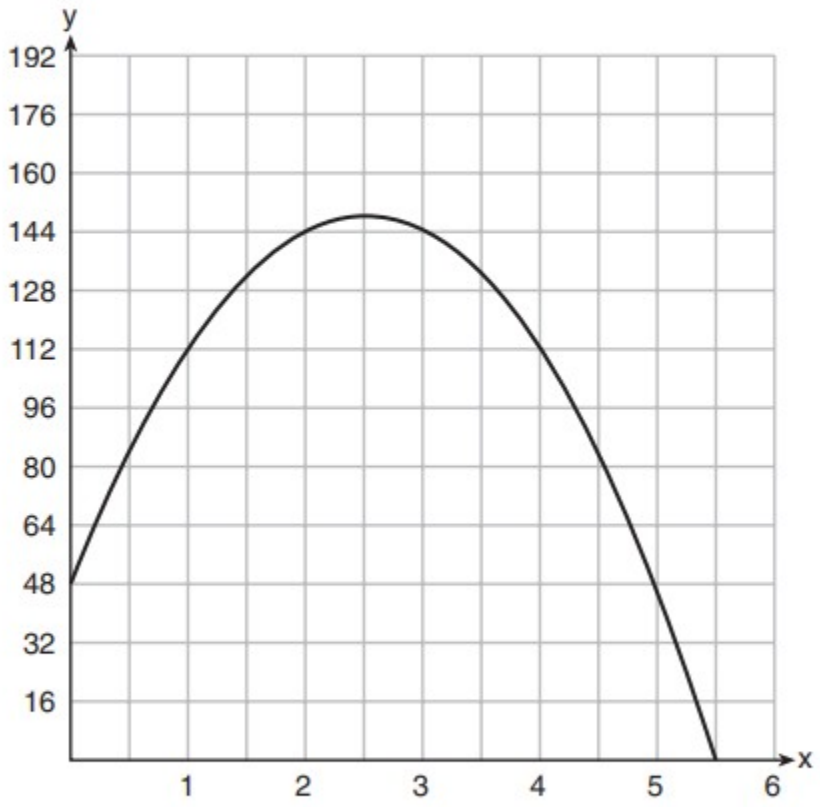
(2) the profit earned from the sale of one radio

(3) the amount spent to manufacture each radio

(4) the average number of radios manufactured

Question 9.

A ball is thrown into the air from the edge of a 48-foot-high cliff so that it eventually lands on the ground. The graph below shows the height, y, of the ball from the ground after x seconds.



For which interval is the ball's height always *decreasing*?

(1) $0 \leq x \leq 2.5$

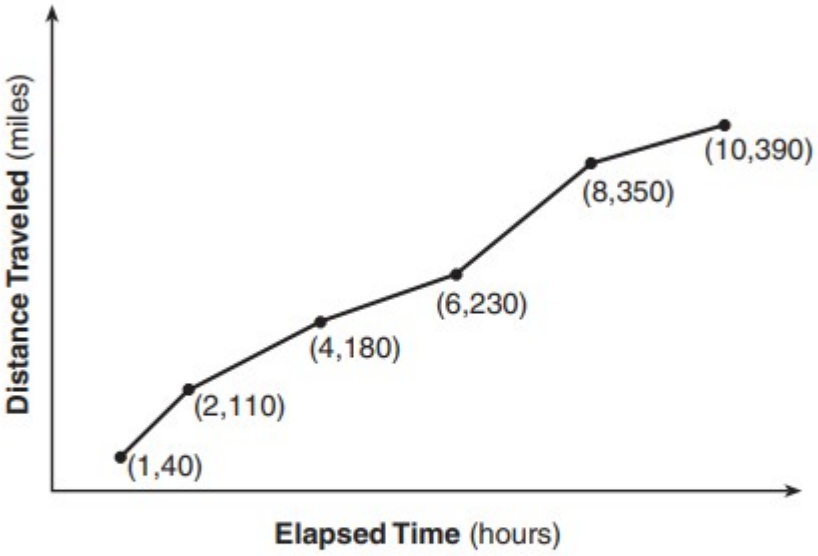
(2) $0 < x < 5.5$

(3) $2.5 < x < 5.5$

(4) $x \geq 2$

Question 10.

The Jamison family kept a log of the distance they traveled during a trip, as represented by the graph below.



During which interval was their average speed the greatest?

(1) the first hour to the second hour

(2) the second hour to the fourth hour

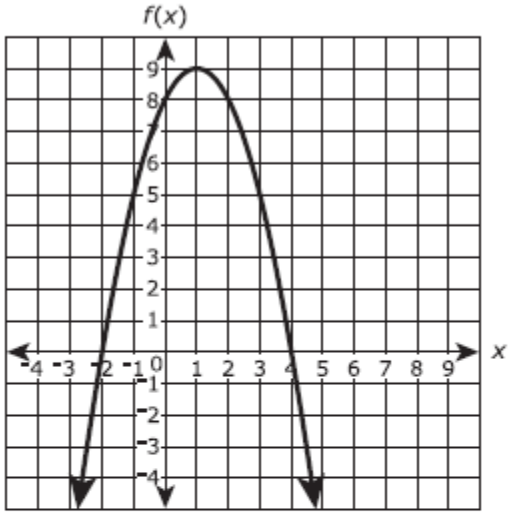
(3) the sixth hour to the eighth hour

(4) the eighth hour to the tenth hour

Bonus

Question 11.

The figure shows a graph of the function of $f(x)$ in the xy-coordinate plane, with the vertex at $(1, 9)$ and the zeros at -2 and 4.



The function g is defined by $g(x) = -3x + 2$.

Which statements are true? Select **all** that apply.

A. $f(-2)$ is greater than $g(-2)$.

B. $f(-1)$ is less than $g(-1)$.

C. $f(0)$ is greater than $g(0)$.

D. $f(1)$ is less than $g(1)$.

E. $f(2)$ is greater than $g(2)$.