Algebra Quick-Quiz-03072022

Question 1.

The members of the senior class are planning a dance. They use the equation $r = pn$ to determine the total receipts. What is $n$ expressed in terms of $r$ and $p$?

(1) $n = r + p$

(2) $n = r - p$

(3) $n = \frac{p}{r}$

(4) $n = \frac{r}{p}$

Question 2

A satellite television company charges a one-time installation fee and a monthly service charge. The total cost is modeled by the function $y = 40 + 90x$. Which statement represents the meaning of each part of the function?

(1) $y$ is the total cost, $x$ is the number of months of service, \$90 is the installation fee, and \$40 is the service charge per month.

(2) $y$ is the total cost, $x$ is the number of months of service, \$40 is the installation fee, and \$90 is the service charge per month.

(3) $x$ is the total cost, $y$ is the number of months of service, \$40 is the installation fee, and \$90 is the service charge per month.

(4) $x$ is the total cost, $y$ is the number of months of service, \$90 is the installation fee, and \$40 is the service charge per month.

Question 3.

If $4x^2 - 100 = 0$, the roots of the equation are

(1) $-25$ and 25

(2) $-25$, only

(3) $-5$ and 5

(4) $-5$, only

Question 4.

Which point is *not* on the graph represented by $y = x^2 + 3x - 6$?

(1) $(-6,12)$

(2) $(-4,-2)$

(3) $(2,4)$

(4) $(3,-6)$

Question 5.

A company produces $x$ units of a product per month, where $C(x)$ represents the total cost and $R(x)$ represents the total revenue for the month. The functions are modeled by $C(x) = 300x + 250$ and $R(x) = -0.5x^2 + 800x - 100$. The profit is the difference between revenue and cost where $P(x) = R(x) - C(x)$. What is the total profit, $P(x)$, for the month?

(1) $P(x) = -0.5x^2 + 500x - 150$

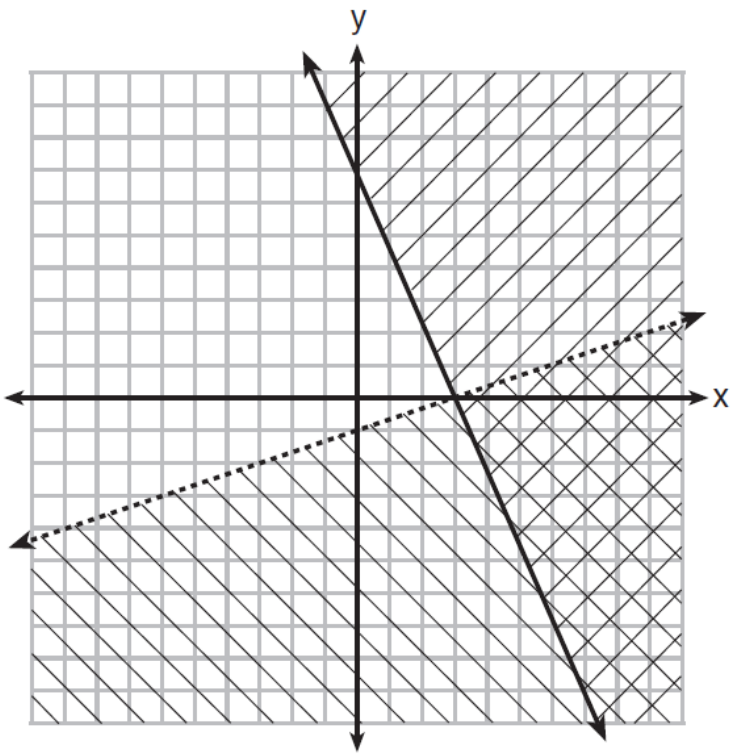
(2) $P(x) = -0.5x^2 + 500x - 350$

(3) $P(x) = -0.5x^2 - 500x + 350$

(4) $P(x) = -0.5x^2 + 500x + 350$

Question 6.

What is one point that lies in the solution set of the system of inequalities graphed below?




(1) (7,0)
(2) (3,0)
(3) (0,7)
(4) (−3,5)

Question 7.

The value of the $x$-intercept for the graph of $4x - 5y = 40$ is

(1) 10
(2) $\frac{4}{5}$
(3) $-\frac{4}{5}$
(4) $-8$

Question 8.

Sam and Jeremy have ages that are consecutive odd integers. The product of their ages is 783. Which equation could be used to find Jeremy's age, $j$, if he is the younger man?

(1) $j^2 + 2 = 783$

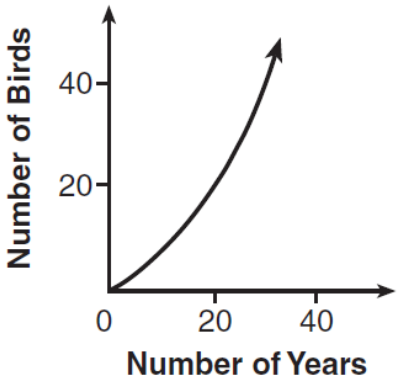
(2) $j^2 - 2 = 783$

(3) $j^2 + 2j = 783$

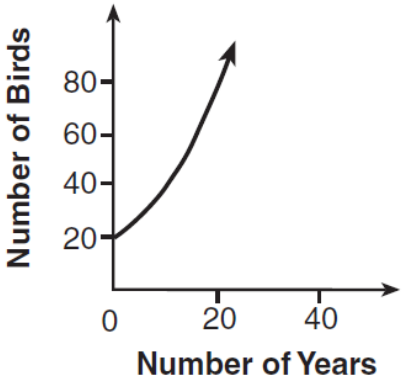
(4) $j^2 - 2j = 783$

Question 9.

A population that initially has 20 birds approximately doubles every 10 years. Which graph represents this population growth?




(1)

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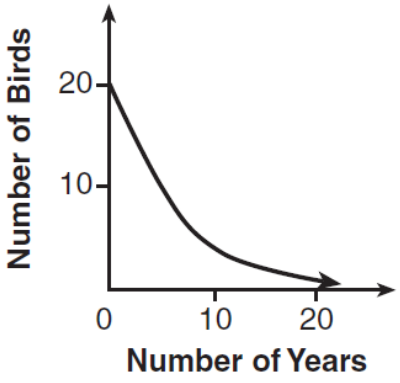


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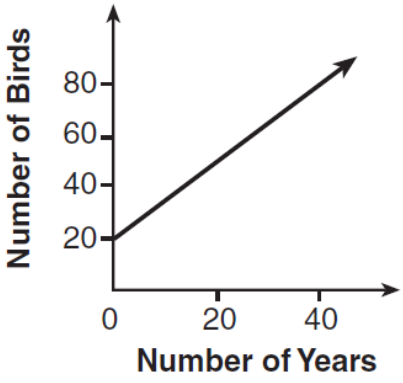



(4)

Question 10.

Let $f$ be a function such that $f(x) = 2x - 4$ is defined on the domain $2 \leq x \leq 6$. The range of this function is

(1) $0 \leq y \leq 8$

(2) $0 \leq y < \infty$

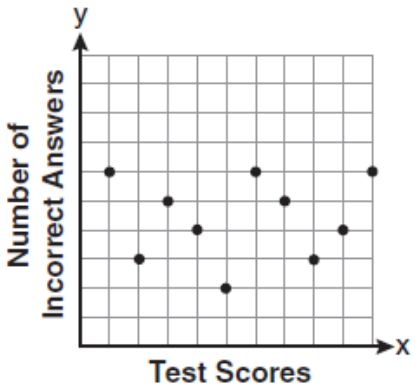
(3) $2 \leq y \leq 6$

(4) $-\infty < y < \infty$

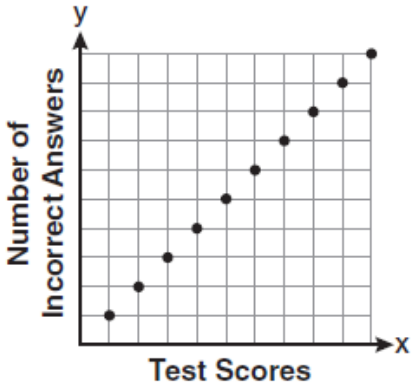
Bonus Question

Question 11a.

Which scatter plot shows the relationship between $x$ and $y$ if $x$ represents a student score on a test and $y$ represents the number of incorrect answers a student received on the same test?




(1)

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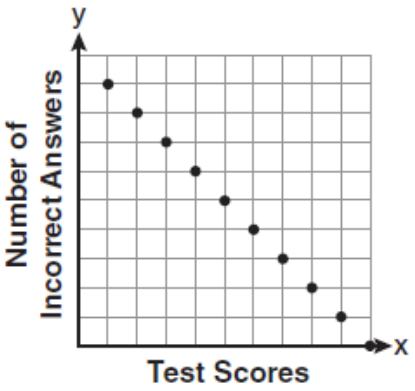


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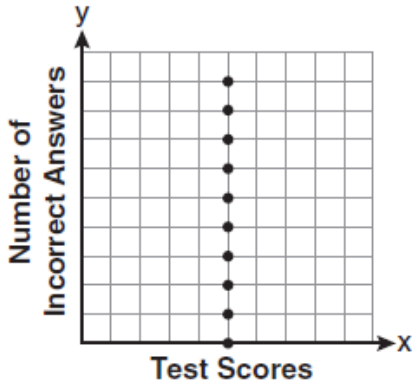


(4)

Question 11b.

Which relation represents a function?

(1) {(0,3), (2,4), (0,6)}

(2) {(−7,5), (−7,1), (−10,3), (−4,3)}

(3) {(2,0), (6,2), (6,−2)}

(4) {(−6,5), (−3,2), (1,2), (6,5)}