Algebra 2 Quick Quiz 12082022

Question 1.

What is the solution of $x^2+5x-3=0$?

A $\frac{-5\pm\sqrt{13}}{2}$

B $\frac{-5\pm\sqrt{37}}{2}$

C $\frac{5\pm\sqrt{13}}{2}$

D $\frac{5\pm\sqrt{37}}{2}$

Question 2

What is the y-intercept of $f(x)=3x^2-2x+1$?

A (0, -1)
B (0, 1)
C (-1, 0)
D (1, 0)

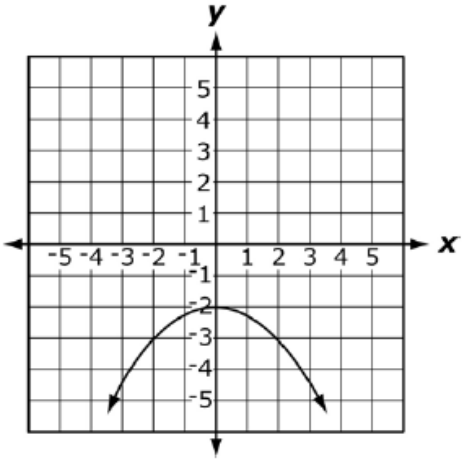
Question 3.

What are the coordinates at the minimum point of $f(x)=x^2-4x+3$?

A (-1, -2)
B (-1, 2)
C (2, -1)
D (2, 1)

Question 4. do not USE GRAPHING SOFTWARE TO ANSWER THIS QUESTION.

Which function represents this graph?



A $f(x)=\frac{-1}{4}x^2-2$

B $f(x)=\frac{1}{4}x^2-2$

C $f(x)=-4x^2-2$

D $f(x)=4x^2-2$

Question 5.

Which statement best describes these two functions?

$$f(x)=x^2-x+6$$
$$g(x)=-3x^2+3x+5$$

A They have no common points.
B They have the same x-intercepts.
C The maximum of *f(x)* is the same as the minimum of *g(x)*.
D The maximum of *g(x)* is the same as the minimum of *f(x)*.

Question 6.

Which statement best describes these two functions?

$$f(x)=x^2-x+4$$
$$g(x)=-3x^2+3x+7$$

A The maximum of *f(x)* is less than the minimum of *g(x)*.
B The minimum of *f(x)* is less than the maximum of *g(x)*.
C The maximum of *f(x)* is greater than the minimum of *g(x)*.
D The minimum of *f(x)* is greater than the maximum of *g(x)*.

Question 7.

The length of a rectangular swimming pool is 20 feet greater than the width. The surface area of the pool is 1,500 square feet. What are the length and width of the pool?

A length = 20 ft, width =20 ft
B length = 50 ft, width =30 ft
C length = 60 ft, width =40 ft
D length = 150 ft, width =10 ft

Question 8.

The profit, *P*, (in dollars) for Ace Car Rental is given by $P = 100x - 0.1x^2$, where *x* is the number of cars rented. How many cars have to be rented for the company to maximize profits?

A 500 cars
B 1,000 cars
C 12,500 cars
D 25,000 cars

Question 9.

The revenue, R, at a bowing alley is given by the equation $R = \frac{-1}{800}\left(x^2 - 2,400x\right)$, where x is the number of frames bowled. What is the maximum amount of revenue the bowling alley can generate?

A $800
B $1,200
C $1,800
D $2,400

Question 10.

What is the equation of a circle with center (-4, 2) and diameter 6?

A $(x-4)^2 + (y+2)^2 = 6$
B $(x+4)^2 + (y-2)^2 = 6$
C $(x-4)^2 + (y+2)^2 = 9$
D $(x+4)^2 + (y-2)^2 = 9$

Bonus Question

Question 11

Use the information provided to answer Part A and Part B for question 9.

DeShawn is in his fifth year of employment as a patrol officer for the Metro Police. His salary for his first year of employment was $47,000. Each year after the first, his salary increased by 4% of his salary the previous year.

9. Part A

What is the sum of DeShawn's salaries for his first five years of service?

A. $101,983

B. $188,000

C. $219,932

D. $254,567

Part B

If DeShawn continues his employment at the same rate of increase in yearly salary, for which year will the sum of his salaries first exceed $1,000,000? Give your answer to the nearest integer.

Enter your answer in the box.