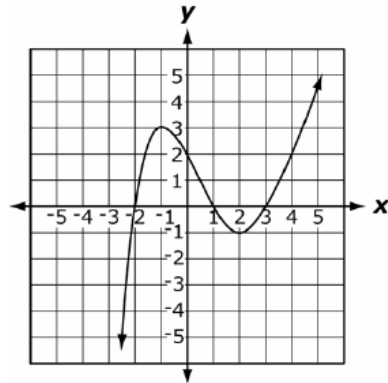# Algebra 2 Quick Quiz 12122022

Question 1.
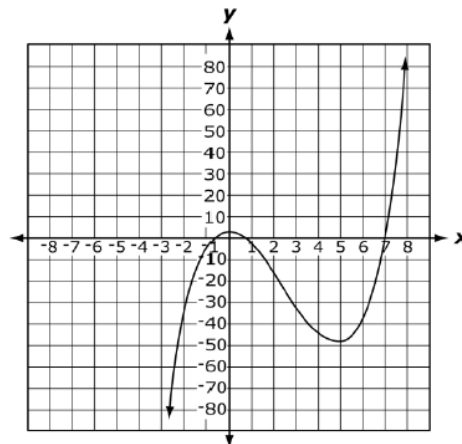
What is the set of approximate y-values of the relative minimum and maximum of this graphed function?

A {2}
B {-1, 2}
C {-1, 3}
D {-2, 1, 3}

Question 2

What are the properties of the point (0, 3) in this graphed function?

A It is a relative minimum and an x-intercept.
B It is a relative maximum and an x-intercept.
C It is a relative minimum and an y-intercept.
D It is a relative maximum and an y-intercept.

Question 3.

The intensity, L, of light varies inversely with the square of the distance, r, from the source of the light. Given that k is the constant of proportionality, which equation describes this relationship?

A $L = 2kr$

B $L = \dfrac{k}{r^2}$

C $L = k\sqrt{r}$

D $L = kr^2$

Question 4.

A company is selling an item and determines that the profit from selling the item for a price of x dollars is given by the function below.

$$P(x) = \dfrac{-1}{4}(x-16)^2 + 4$$

Which price will maximize the profit?
A $4
B $12
C $16
D $20

Question 5.

The path of a kicked soccer ball can be modeled by the function $f(x) = 26 + 2x - x^2$, where x is the horizontal distance (in meters) and $f(x)$ is the height (in meters). If the height is 2 meters, what is the horizontal distance?

A 4 meters
B 6 meters
C 12 meters
D 24 meters

Question 6.

A landscape designer has to construct a rectangular flower bed with a perimeter of 100 feet and the maximum possible area. What is the area of the flower bed?

  A 25 sq. ft
  B 100 sq. ft
  C 625 sq. ft
  D 2,500 sq. ft

Question 7.

What is the value of x in this rational equation $\dfrac{2}{x-1}=\dfrac{3}{x+1}$?

  A 2
  B 3
  C 4
  D 5

Question 8.

What is the solution set of this rational equation $\dfrac{5}{2x-2}-\dfrac{9}{2x}=\dfrac{-1}{4}$?

  A {6}
  B {-3}
  C {3, 6}
  D {-3, -6}

Question 9.

What is the value of x in this rational equation $2x=\dfrac{4x+5}{3}$?

  A -4
  B -1
  C $\dfrac{1}{2}$
  D $\dfrac{5}{2}$

Question 10.

What is the solution set of this rational equation $\dfrac{-3}{x^2}+\dfrac{1}{2}=\dfrac{1}{2x}$?

A {-3,-2}
B {-3, 2}
C {-2, 3}
D {2, 3}

Bonus Question

Question 11

Functions f and g are defined below.

$$f(x) = \frac{1}{2x}$$
$$g(x) = x^2$$

The graphs of $y = f(x)$ and $y = g(x)$ intersect at point P.

Determine the x-coordinate of P. Round your answer to the nearest tenth.