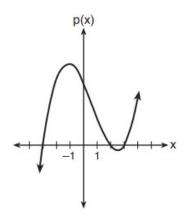
# Algebra 2 Quick Quiz 11152022

#### Question 1.

The graph of the function p(x) is sketched belov



Which equation could represent p(x)?

(1) 
$$p(x) = (x^2 - 9)(x - 2)$$

(2) 
$$p(x) = x^3 - 2x^2 + 9x + 18$$

(3) 
$$p(x) = (x^2 + 9)(x - 2)$$

(4) 
$$p(x) = x^3 + 2x^2 - 9x - 18$$

## Question 2

Cheap and Fast gas station is conducting a consumer satisfaction survey. Which method of collecting data would most likely lead to a biased sample?

- (1) interviewing every 5th customer to come into the station
- (2) interviewing customers chosen at random by a computer at the checkout
- (3) interviewing customers who call an 800 number posted on the customers' receipts
- (4) interviewing every customer who comes into the station on a day of the week chosen at random out of a hat

#### Question 3.

The expression  $6xi^3(-4xi + 5)$  is equivalent to

(1) 
$$2x - 5i$$

$$(3) -24x^2 + 30x - i$$

$$(2) -24x^2 - 30xi$$

$$(2) -24x^2 - 30xi \qquad (4) \ 26x - 24x^2i - 5i$$

#### Question 4.

Given the parent function  $p(x) = \cos x$ , which phrase best describes the transformation used to obtain the graph of  $g(x) = \cos(x + a) - b$ , if a and b are positive constants?

- (1) right a units, up b units
- (2) right a units, down b units
- (3) left a units, up b units
- (4) left a units, down b units

#### Question 5.

The solution to the equation  $4x^2 + 98 = 0$  is

(3) 
$$\pm \frac{7\sqrt{2}}{2}$$

(2) 
$$\pm 7i$$

(4) 
$$\pm \frac{7i\sqrt{2}}{2}$$

### Question 6.

A manufacturing company has developed a cost model,  $C(x) = 0.15x^3 + 0.01x^2 + 2x + 120$ , where x is the number of items sold, in thousands. The sales price can be modeled by S(x) = 30 - 0.01x. Therefore, revenue is modeled by  $R(x) = x \cdot S(x)$ .

The company's profit, P(x) = R(x) - C(x), could be modeled by

$$(1) \ \ 0.15x^3 + 0.02x^2 - 28x + 120$$

$$(2) -0.15x^3 - 0.02x^2 + 28x - 120$$

$$(3) \ -0.15x^3 + 0.01x^2 - 2.01x - 120$$

$$(4) -0.15x^3 + 32x + 120$$

#### Question 7.

Which binomial is a factor of  $x^4 - 4x^2 - 4x + 8$ ?

$$(1) x - 2$$

$$(3) x - 4$$

$$(2) x + 2$$

$$(4) x + 4$$

#### Question 8.

For  $x \neq 0$ , which expressions are equivalent to one divided by the sixth root of x?

$$I.\frac{6\sqrt{x}}{\sqrt[3]{x}} \qquad II.\frac{x^{\frac{1}{6}}}{x^{\frac{1}{3}}} \qquad III.x^{-\frac{1}{6}}$$

- (1) I and II, only
- (3) II and III, only
- (2) I and III, only
- (4) I, II, and III

#### Question 9.

To solve  $\frac{2x}{x-2} - \frac{11}{x} = \frac{8}{x^2 - 2x}$ , Ren multiplied both sides by the

least common denominator. Which statement is true?

- (1) 2 is an extraneous solution.
- (2)  $\frac{7}{2}$  is an extraneous solution.
- (3) 0 and 2 are extraneous solutions.
- (4) This equation does not contain any extraneous solutions.

#### Question 10.

Given f(9) = -2, which function can be used to generate the sequence -8, -7.25, -6.5, -5.75,...?

$$(1) \ f(n) = -8 + 0.75n$$

(2) 
$$f(n) = -8 - 0.75(n - 1)$$

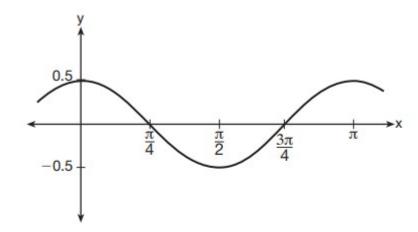
(3) 
$$f(n) = -8.75 + 0.75n$$

$$(4) \ f(n) = -0.75 + 8(n-1)$$

# **Bonus Question**

### Question 11

Which equation is represented by the graph shown below?



- $(1) \ y = \frac{1}{2} \cos 2x$
- $(3) \ \ y = \frac{1}{2} \cos x$
- (2)  $y = \cos x$

 $(4) \ \ y = 2\cos\frac{1}{2}x$