

Algebra 2 quick quiz 03292023

Question 1.

Solve $\frac{\sqrt{x+3.5}}{2} = 1.5$.

Enter your answer in the box.

$x =$

Question 2.

Given the expression $\frac{4n^{2t}-1}{2n^t-1}$, where t is an integer greater than or equal to 1, write the expression as a binomial.

Enter your expression in the space provided. Enter **only** your expression.

Question 3.

Solve the quadratic equation $(4x + 5)^2 = -5(5 + 4x)$.

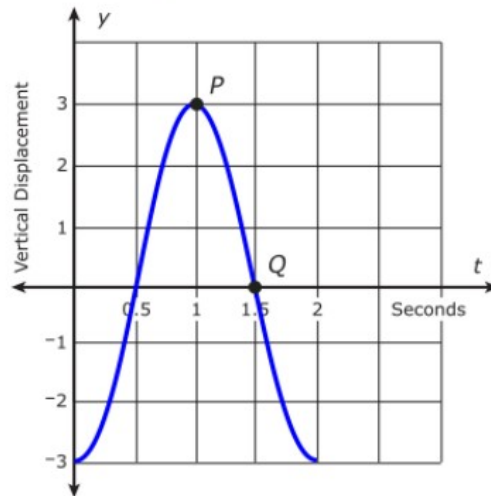
Select from the drop-down menus to correctly complete the sentence.

The solutions are and .

-2.5	-2.5
-1.5	-1.5
-1.25	-1.25
-1	-1
1	1
1.25	1.25
1.5	1.5
2.5	2.5

Question 4.

Suppose that a weight is attached to a hanging spring. When the weight is pulled down and released, it will bob up and down with vertical displacement from its original resting point. The graph shows a weight pulled down 3 centimeters and allowed to go up and down for 2 seconds.



Determine the average rate of change from point P to point Q .

Enter your answer in the box.

Question 5.

In the table shown, i represents the imaginary unit. Select **all** cells in the table for which the product of the row value and the column value is a real number.

Select all appropriate cells in the table.

Value	-3	$-2i$	5	i^2
i	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Question 6.

In the numbers listed, i represents the imaginary unit. For each number, indicate if it is equal to 1, to -1 , or to neither by dragging it to one of the boxes in the appropriate column.

Drag and drop each number into the appropriate box.

$(2 + i)^2$	i^6	$-1i$	$i^2 (i^{10})$
Equal to 1	Equal to -1	Neither	

Question 7.

Which of the quadratic equations listed do **not** have any real solutions?

Drag and drop each appropriate equation into the box.

$x^2 - 10x + 34 = 0$	$3x^2 = 4x - 10$	$x^2 - 3x = 0$	$-7x + 18 = x^2$
$6x^2 + 11x - 35 = 0$			
Equations with no real solutions			

Question 8.

In the equation $\left(5^{\frac{1}{3}}\right) \left(5^{\frac{2}{3}}\right)^4 = 5^x$, what is the value of x ?

Enter your answer in the box.

$x =$

Question 9.

$$f(x) = \frac{(x^{-2})^3}{\left(x^{\frac{1}{4}}\right)^8}$$

Which of the listed functions is equivalent to $f(x)$ for all positive values of x ?

- A. $g(x) = x^4$
- B. $g(x) = x^8$
- C. $g(x) = \frac{1}{x^4}$
- D. $g(x) = \frac{1}{x^8}$

Question 10.

For an unknown polynomial function $p(x)$, $p(4) + 2 = 2$. Which binomial is a factor of $p(x)$?

- A. $x - 2$
- B. $x + 2$
- C. $x - 4$
- D. $x + 4$

Bonus Question

Question 11a.

The amount of a certain element that remains after t hours can be determined using the expression $5(0.5)^{\frac{t}{64}}$. Which expression can be used to find the approximate amount of the element that remains after m minutes?

- A. $5(0.5)^{\frac{60m}{64}}$
- B. $5(0.5)^{\frac{64m}{60}}$
- C. $5(0.5)^{\frac{m}{64}}$
- D. $5(0.5)^{\frac{m}{60-64}}$

Question 11b.

Given: $y = f(x) = |x - 3|$

and $y = g(x) = x^2 - 5x + 6$

At what points do $f(x)$ and $g(x)$ intersect?

Select **all** that apply.

- A. $(-3, 6)$
- B. $(-1, 4)$
- C. $(1, 2)$
- D. $(1, 4)$
- E. $(3, 0)$