

Algebra 2 quick quiz 01052023

Question 1.

What is the simplest form of $\frac{5x^3y + 20x^2y^2 + 20xy^3}{5xy}$?

A. $x^2 + 4y^2$

B. $x^2 + y^2$

C. $(x+2y)^2$

D. $(x+2)^2$

Question 2

$$\frac{2x^2 - 10x}{x^2 + 8x + 16} \cdot \frac{4x + 16}{x^2 - 25} =$$

A. $\frac{8x}{(x+4)(x+5)}$

B. $\frac{8x}{(x+4)(x-5)}$

C. $\frac{2x+4}{x^2+20}$

D. $\frac{2x+4}{(x+4)(x+5)}$

Question 3.

$$\frac{4(x+y)}{5x^2y^3} \div \frac{-2x-2y}{10} =$$

A. $\frac{4(x+y)^2}{5x^2y^3}$

B. $\frac{4(x+y)}{x^2y^3(x-y)}$

C. $\frac{4}{x^2y^3}$

D. $\frac{4}{x^2y^3}$

Question 4.

What is an equivalent form of $\frac{2}{3+i}$?

A. $\frac{4-i}{4}$

B. $\frac{3-i}{5}$

C. $\frac{3-i}{4}$

D. $\frac{4-i}{5}$

Question 5.

What is the product of the complex numbers $(3+i)$ and $(3-i)$?

A. 8

B. 10

C. $10-6i$

D. $9-i$

Question 6.

If $i = \sqrt{-1}$ and a and b are non-zero real numbers, what is $\frac{1}{a+bi}$?

A. $\frac{a-bi}{a^2+b^2}$

B. $\frac{a-bi}{a^2-b^2}$

C. $\frac{a+bi}{a^2+b^2}$

D. $\frac{a+bi}{a^2-b^2}$

Question 7.

Which expression represents $(-3-2i) - (-5+i)$?

A. $-8-3i$

B. $-8-i$

C. $2-i$

D. $2-3i$

Question 8.

What is the sum of the complex numbers $(12-5i)$ and $(-3+4i)$?

A. $9-9i$

B. $15-9i$

C. $9-i$

D. $-16+63i$

Question 9.

What are the solutions to the equation $x^2 + 2x + 2 = 0$?

A. $x=0; x=-2i$

B. $x=0; x=-2$

C. $x=-1+2\sqrt{2}; x=-1-2\sqrt{2}$

D. $x=-1+i; x=-1-i$

Question 10.

What are the solutions to the equation

$$1 + \frac{1}{x^2} = \frac{3}{x}?$$

A. $x = 3 + \frac{\sqrt{13}}{2}; x = 3 - \frac{\sqrt{13}}{2}$

B. $x = \frac{3}{2} + \frac{\sqrt{5}}{2}; x = \frac{3}{2} - \frac{\sqrt{5}}{2}$

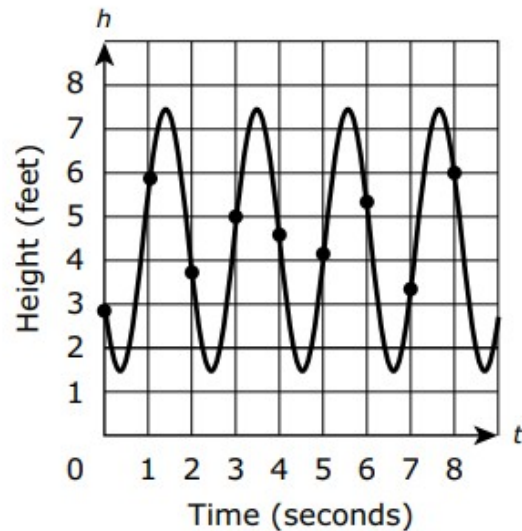
C. $x = 3 + \frac{\sqrt{5}}{2}; x = 3 - \frac{\sqrt{5}}{2}$

D. $x = \frac{3}{2} + \frac{\sqrt{13}}{2}; x = \frac{3}{2} - \frac{\sqrt{13}}{2}$

Bonus Question

Question 11

The graph models the height, h , above the ground, in feet, at time t , in seconds, of a person swinging on a swing. Each point indicated on the graph represents the height of the person above the ground at the end of each one-second interval.



Select **two** time intervals for which the average rate of change in the height of the person is approximately $-\frac{1}{2}$ feet per second.

- A.** from 0 seconds to 1 second
- B.** from 1 second to 2 seconds
- C.** from 2 seconds to 3 seconds
- D.** from 3 seconds to 4 seconds
- E.** from 4 seconds to 5 seconds
- F.** from 5 seconds to 6 seconds
- G.** from 6 seconds to 7 seconds
- H.** from 7 seconds to 8 seconds

