Algebra 2 Quick Quiz 10312022

Question 1.

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

A $(x+2)^2$

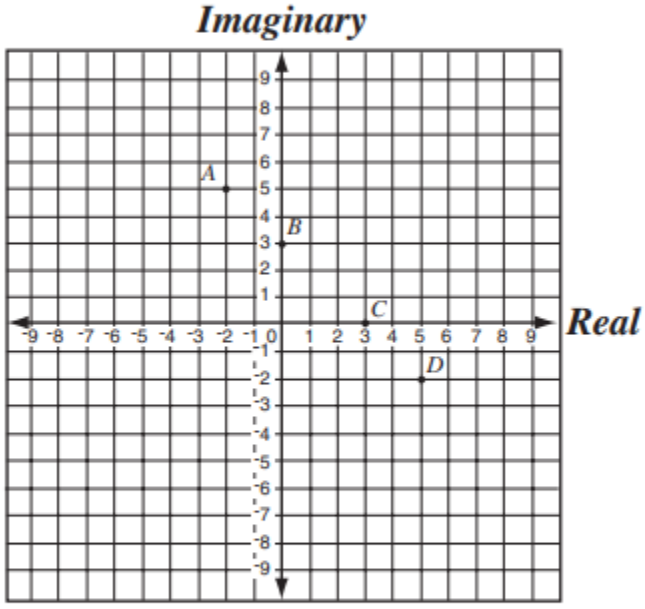
B $(x+2y)^2$

C $x^2 + y^2$

D $x^2 + 4y^2$

Question 2

If $i = \sqrt{-1}$, which point shows the location of $5 - 2i$ on the plane?



A point A

B point B

C point C

D point D

Question 3.

If $i = \sqrt{-1}$, what is the value of i^4?

A i

B $-i$

C 1

D -1

Question 4.

If $i = \sqrt{-1}$, then $4i(6i) =$

A 48

B 24

C -24

D -48

Question 5.

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

A 8

B 10

C $9-i$

D $10-6i$

Question 6.

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

A $x=0; x=-2$

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

C $x=-1+i; x=-1-i$

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

Question 7.

What are the solutions to the equation $1+\frac{1}{x^2}=\frac{3}{x}$?

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

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

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

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

Question 8.

There are two numbers with the following properties.

1) **The second number is 3 more than the first number.**

2) **The product of the two numbers is 9 more than their sum.**

Which of the following represents possible values of these two numbers?

A $-6,-3$

B $-4,-1$

C $-1, 4$

D $-3, 6$

Question 9.

Jenny is solving the equation $x^2 - 8x = 9$ by completing the square. What number should be added to both sides of the equation to complete the square?

A 2

B 4

C 8

D 16

Question 10.

Which of the following *most* accurately describes the translation of the graph $y = (x+3)^2 - 2$ to the graph of $y = (x-2)^2 + 2$?

A up 4 and 5 to the right

B down 2 and 2 to the right

C down 2 and 3 to the left

D up 4 and 2 to the left

Bonus Question

Question 11

If k is a constant, what is the value of k such that the polynomial $k^2x^3 - 6kx + 9$ is divisible by $x - 1$?