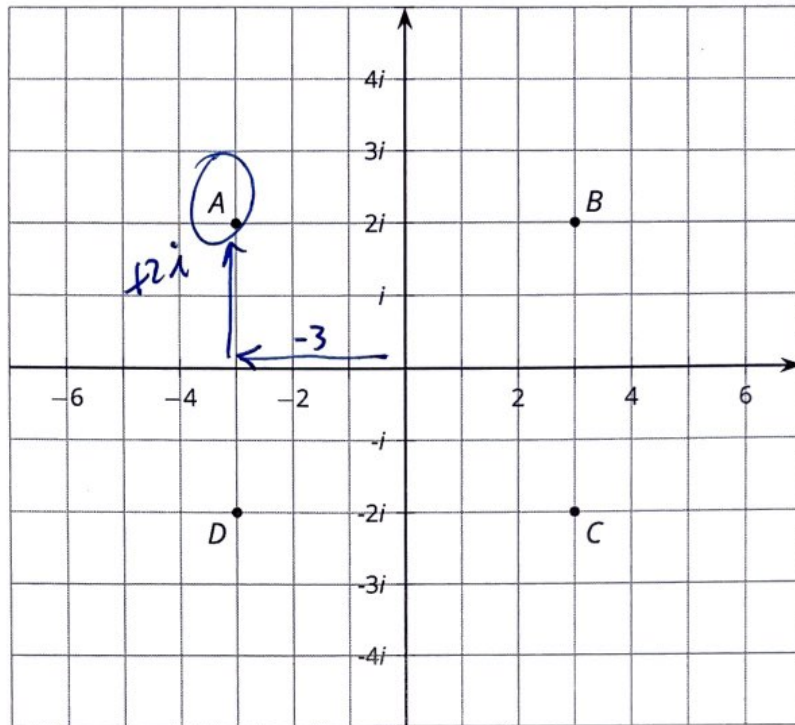


Solutions

Lesson 11 Practice Problems

1. Which point represents the complex number $-3 + 2i$?



A. A

B. B

C. C

D. D

2. Match each expression to an equivalent expression.

- | | |
|------------------------|-----------|
| A. $2i \cdot 8 = 16i$ | 1. -16 |
| B. $16i^3 = -16i$ | 2. 16 |
| C. $(2i)^4 = 16$ | 3. $-16i$ |
| D. $2i \cdot 8i = -16$ | 4. $16i$ |
- Handwritten blue lines show the following matches: A to 4, B to 3, C to 2, and D to 1.*

3. a. Diego squared a number and got 4. Andre squared a different number and got 4. What were the numbers that Diego and Andre squared?

2 and -2

- b. Jada squared a number and got -4. Elena squared a different number and got -4. What were the numbers that Jada and Elena squared?

$2i$ and $-2i$

4. Find all solutions to each equation.

a. $a^2 = 1$ $a = 1, -1$

b. $b^2 = 13$ $b = \pm \sqrt{13}$

c. $c^2 = -9$ $c = 3i, -3i$

d. $d^2 = -5$ $d = \pm i\sqrt{5}$

5. Find the exact solution(s) to each of these equations, or explain why there is no solution.

a. $\sqrt[3]{a+2} = 4$ *cube each side*

$$a+2 = 64$$

$$a = 62$$

b. $\sqrt[3]{b} + 5 = 4$

$$\sqrt[3]{b} = -1$$

$$b = -1$$

c. $\sqrt[3]{c-1} - 14 = -4$

$$\sqrt[3]{c-1} = 10$$

$$c-1 = 1000 \quad c = 1001$$

(From Unit 3, Lesson 8.)

6. Explain how you know that $\sqrt{-1}$ is not a negative number.

When you square a negative real number, you get a positive number.

(From Unit 3, Lesson 10.)

But when you square $\sqrt{-1}$, $(\sqrt{-1})^2 = -1$, you get a negative number, not a positive number. So therefore, $\sqrt{-1}$ is not negative