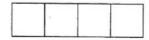
If a + bi = (1 + 2i)(3 - 4i), where a and b are constants and $i = \sqrt{-1}$, what is the value of a + b?

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If $a + bi = \frac{4+i}{2-i}$, where a and b are constants and

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



For what value of b does $(b + i)^2 = 80 + 18i$?

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The solutions of the equation $x^2 - 2x + 15 = 0$ are $x = a + i\sqrt{b}$ and $x = a - i\sqrt{b}$, where a and b are positive numbers. What is the value of a + b?



Given that $i = \sqrt{-1}$, which of the following is equal

to
$$\frac{1}{(1+i)^2}$$
?

A)
$$\frac{1}{2} - \frac{1}{2}i$$

B)
$$-\frac{1}{2}i$$

C)
$$\frac{1}{2}i$$

D)
$$\frac{1}{2} + \frac{1}{2}i$$

Which of the following expressions is equal to $(2+2i)^2$?

D)
$$4 - 4i$$

If B(3 + i) = 3 - i, what is the value of B?

A)
$$\frac{3}{5} + \frac{4}{5}i$$

B)
$$\frac{4}{5} + \frac{3}{5}i$$

C)
$$\frac{3}{5} - \frac{4}{5}i$$

D)
$$\frac{4}{5} - \frac{3}{5}$$

$$x^2 + kx = -6$$

If one of the solutions to the equation above is $x = 1 - i\sqrt{5}$, what is the value of k?

If $i^{m} = -i$, which of the following CANNOT be the value of m?

- A) 15
- B) 18
- C) 19
- D) 27