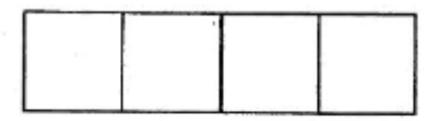
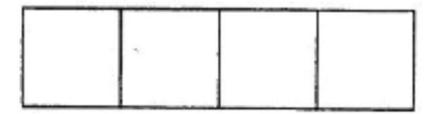
If a + bi = (1 + 2i)(3 - 4i), where a and b are constants and  $i = \sqrt{-1}$ , what is the value of a + b?

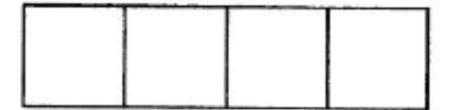


If  $a + bi = \frac{4+i}{2-i}$ , where a and b are constants and

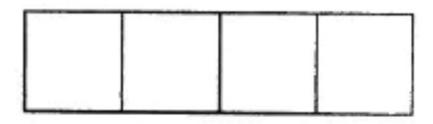
 $i = \sqrt{-1}$ , what is the value of a?



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



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  $(2+2i)^2$ ?

- A) 0
- B) 4i
- C) 8i
- 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)  $\frac{4}{5} \frac{3}{5}i$

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

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

- A) -4
- B) -2
- C) 2
- D) 4

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

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