Operations with Complex Numbers

Simplify the following expressions involving complex numbers.

1. $(3 + 2i) + (4 - 8i)$

2. $5i(-2 - 4i)$

3. $7i \cdot 2i(-6 - 6i)$

4. $-8i - 7i + 4 + 4 + i$

5. $12(7 - 5i)(-1 - 2i)$

6. $5i + 7i - 12$

7. $\dfrac{-2 + 5i}{-3 - 4i}$

8. $4 + 2i - (3 - 3i) - 7i$

9. $(-2 + 2i)(5 + 6i)(-1 - i)$

10. $(6 + 6i)(-3 - i)$

11. $(2 - 5i)^2$

12. $(-8i - 4)^2$

13. $\dfrac{9 + 2i}{-2 - i}$

14. $(5 + 6i)(5 - 6i)$

15. $\dfrac{2 + 7i}{9 + i}$

16. $(4 + 5i)(4 - i)$

17. $-6(2 + 6i)$

18. $-3 + i + 4 - 5i$

Operations with Complex Numbers

MATH MONKS

Answers

① (3 + 2i) + (4 - 8i) ② 5i(-2 - 4i) ③ 7i . 2i(-6 - 6i)

7 - 6i 20 - 10i 84 + 84i

④ -8i - 7i + 4 + 4 + i ⑤ 12(7 - 5i)(-1 - 2i) ⑥ 5i + 7i - 12

8 - 14i -204 - 108i -12 + 12i

⑦ $\dfrac{-2 + 5i}{-3 - 4i}$ ⑧ 4 + 2i - (3 - 3i) - 7i ⑨ (-2 + 2i)(5 + 6i)(-1 - i)

$\dfrac{-14}{25} - \dfrac{23}{25}i$ 1 - 2i 20 + 24i

⑩ (6 + 6i)(-3 - i) ⑪ $(2 - 5i)^2$ ⑫ $(-8i - 4)^2$

-12 - 24i -21 - 20i -48 + 64i

⑬ $\dfrac{9 + 2i}{-2 - i}$ ⑭ (5 + 6i)(5 - 6i) ⑮ $\dfrac{2 + 7i}{9 + i}$

-4 + i 61 $\dfrac{25}{82} + \dfrac{61}{82}i$

⑯ (4 + 5i)(4 - i) ⑰ -6(2+ 6i) ⑱ -3 + i + 4 - 5i

21 + 16i -12 - 36i 1 - 4i