複素数の計算練習 1

(1) $-1-7i-(-3-6i)$

(2) $-(1-3i)+2+2i$

(3) $2i(-2i+2)$

(4) $2i(3-6i)$

(5) $(-8+2i)(-8-2i)$

(6) $(6-i)(5-6i)$

(7) $\overline{(-2+2i)}(-2+2i)$

(8) $\overline{(6-i)}(6+i)$

(9) $\overline{(-7-2i)}\,\overline{(-7+2i)}$

(10) $\overline{\overline{(-7-i)}(-7-i)}$

(11) $(6-i)+\overline{(6+i)}$

(12) $(-8+5i)-\overline{(-8-5i)}$

複素数の計算練習 2

(1) $5+5i+(-5-8i)$

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

(3) $-i(-8-i)$

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

(5) $(5-6i)(-8+i)$

(6) $(-7+4i)(-7-4i)$

(7) $\overline{(1+5i)}(1+5i)$

(8) $(-7-5i)\overline{(-7-5i)}$

(9) $\overline{(3+i)}\,\overline{(3+i)}$

(10) $\overline{\overline{(-3+4i)}(-3+4i)}$

(11) $(-6+6i)-\overline{(-6+6i)}$

(12) $(-5-4i)+\overline{(-5+4i)}$

複素数の計算練習 3

(1) $3-3i-(3+8i)$

(2) $1+2i+2-6i$

(3) $-2i(-2i-8)$

(4) $-2i(6+4i)$

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

(6) $(4+i)(-1-6i)$

(7) $\overline{(-3+3i)}(-3+3i)$

(8) $\overline{(3-4i)}(3+4i)$

(9) $\overline{(-3+3i)}\,\overline{(-3-3i)}$

(10) $\overline{(-5-5i)}\,\overline{(-5-5i)}$

(11) $(-7-4i)-\overline{(-7+4i)}$

(12) $(-5+6i)+\overline{(-5+6i)}$

複素数の計算練習 4

(1) $\dfrac{-80}{-1-3i} \times \dfrac{-1+3i}{-1+3i}$

(2) $\dfrac{1}{-1-6i} \times \dfrac{-1+6i}{-1+6i}$

(3) $\dfrac{10}{-1+2i}$

(4) $\dfrac{1}{1+6i}$

(5) $\dfrac{4+i}{1-2i}$

(6) $\dfrac{-8-9i}{2-i}$

(7) $\dfrac{1}{1+4i} + \dfrac{1}{1-4i} = \dfrac{1 \times (1-4i) + 1 \times (1+4i)}{(1+4i)(1-4i)} = \dfrac{1-4i+1+4i}{1^2+4^2} =$

(8) $\dfrac{2}{2-i} + \dfrac{3}{2+i} = \dfrac{2(2+i)+3(2-i)}{2^2+(-1)^2} =$

(9) $\dfrac{1}{6+i} + \dfrac{i}{6-i} = \dfrac{(6-i)+i(6+i)}{6^2+1^2} =$

(10) $\dfrac{1}{4+2i} - \dfrac{1}{4-2i}$

(11) $\dfrac{1}{1+2i} + \dfrac{1}{1-2i}$

(12) $\dfrac{1}{6+3i} - \dfrac{1}{6-3i}$

(13) $\dfrac{4}{3-6i} + \dfrac{3}{3+6i}$

複素数の計算練習 5

(1) $\dfrac{52}{5+i} \times \dfrac{5-i}{5-i}$

(2) $\dfrac{1}{-2+5i} \times \dfrac{-2-5i}{-2-5i}$

(3) $\dfrac{26}{1+5i}$

(4) $\dfrac{-3}{4+4i}$

(5) $\dfrac{2-5i}{3-4i}$

(6) $\dfrac{-3-7i}{2+3i}$

(7) $\dfrac{1}{3+6i} + \dfrac{1}{3-6i} = \dfrac{1 \times (3-6i) + 1 \times (3+6i)}{(3+6i)(3-6i)} = \dfrac{3-6i+3+6i}{3^2+6^2} =$

(8) $\dfrac{3}{6-2i} + \dfrac{4}{6+2i} = \dfrac{3(6+2i)+4(6-2i)}{6^2+(-2)^2} =$

(9) $\dfrac{1}{3+6i} + \dfrac{i}{3-6i} = \dfrac{(3-6i)+i(3+6i)}{3^2+6^2} =$

(10) $\dfrac{i}{5-2i} + \dfrac{1}{5+2i}$

(11) $\dfrac{1}{3+i} - \dfrac{1}{3-i}$

(12) $\dfrac{i}{3-7i} + \dfrac{1}{3+7i}$

(13) $\dfrac{1}{4-i} + \dfrac{i}{4+i}$

複素数の計算練習 6

(1) $\dfrac{-25}{3+4i} \times \dfrac{3-4i}{3-4i}$

(2) $\dfrac{1}{1+i} \times \dfrac{1-i}{1-i}$

(3) $\dfrac{122}{5+6i}$

(4) $\dfrac{-1}{1-5i}$

(5) $\dfrac{1+4i}{4-3i}$

(6) $\dfrac{-1+i}{2+i}$

(7) $\dfrac{1}{5+2i} + \dfrac{1}{5-2i} = \dfrac{1 \times (5-2i) + 1 \times (5+2i)}{(5+2i)(5-2i)} = \dfrac{5-2i+5+2i}{5^2+2^2} =$

(8) $\dfrac{1}{4+3i} + \dfrac{2}{4-3i} = \dfrac{(4-3i)+2(4+3i)}{4^2+3^2} =$

(9) $\dfrac{1}{4-4i} + \dfrac{i}{4+4i} = \dfrac{(4+4i)+i(4-4i)}{4^2+(-4)^2} =$

(10) $\dfrac{i}{5+2i} + \dfrac{1}{5-2i}$

(11) $\dfrac{1}{8-8i} + \dfrac{i}{8+8i}$

(12) $\dfrac{1}{6+3i} + \dfrac{1}{6-3i}$

(13) $\dfrac{1}{6+2i} - \dfrac{3}{6-2i}$

複素数の計算練習 7

(1) $\dfrac{-1-7i}{2-i}+\dfrac{-1-i}{2+i}=\dfrac{(-1-7i)(2+i)+(-1-i)(2-i)}{2^2+(-1)^2}=$

(2) $\dfrac{3+5i}{1+3i}-\dfrac{-5+3i}{1-3i}=\dfrac{(3+5i)(1-3i)-(-5+3i)(1+3i)}{1^2+3^2}=$

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

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

(5) $\dfrac{9+2i}{3+i}+\dfrac{3-5i}{1+2i}=\dfrac{(9+2i)(3-i)}{3^2+1^2}+\dfrac{(3-5i)(1-2i)}{1^2+2^2}=\dfrac{29-3i}{10}+\dfrac{-7-11i}{5}=$

(6) $\dfrac{-1+9i}{1-i}+\dfrac{8-i}{1-2i}$

複素数の計算練習 8

(1) $\dfrac{2+3i}{3+i}+\dfrac{-7-6i}{3-i}=\dfrac{(2+3i)(3-i)+(-7-6i)(3+i)}{3^2+1^2}=$

(2) $\dfrac{8-9i}{3-4i}-\dfrac{1-i}{3+4i}=\dfrac{(8-9i)(3+4i)-(1-i)(3-4i)}{3^2+(-4)^2}=$

(3) $\dfrac{-9+4i}{2-i}-\dfrac{1-3i}{2+i}$

(4) $\dfrac{3+7i}{1+i}+\dfrac{9-7i}{1-i}$

(5) $\dfrac{4-3i}{1+2i}-\dfrac{2-3i}{3-i}=\dfrac{(4-3i)(1-2i)}{1^2+2^2}-\dfrac{(2-3i)(3+i)}{3^2+(-1)^2}=\dfrac{-2-11i}{5}-\dfrac{9-7i}{10}=$

(6) $\dfrac{-8+5i}{2+i}+\dfrac{5+3i}{3+i}$

複素数の計算練習 9

(1) $\dfrac{-1-i}{4+3i}+\dfrac{1+2i}{4-3i}=\dfrac{(-1-i)(4-3i)+(1+2i)(4+3i)}{4^2+3^2}=$

(2) $\dfrac{-3+i}{1-i}-\dfrac{9-4i}{1+i}=\dfrac{(-3+i)(1+i)-(9-4i)(1-i)}{1^2+(-1)^2}=$

(3) $\dfrac{3-5i}{1-2i}-\dfrac{5+i}{1+2i}$

(4) $\dfrac{-7-5i}{3+7i}+\dfrac{3+i}{3-7i}$

(5) $\dfrac{2+i}{2-i}-\dfrac{7+9i}{4+3i}=\dfrac{(2+i)(2+i)}{2^2+(-1)^2}-\dfrac{(7+9i)(4-3i)}{4^2+3^2}=\dfrac{3+4i}{5}-\dfrac{11+3i}{5}=$

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