

Operations with Complex Numbers Review

Date _____ Period _____

Simplify.

1) $7i - 5i$

2) $-3i + 4i$

3) $5 + 2 + 7i$

4) $2 + 2 + i$

5) $8i - 2 - (3 - 5i)$

6) $-5 + 3i + 1 - 7i$

$$-4 - 4i$$

7) $1 - 2i - (7 - 3i)$

8) $-1 - 5i - (-3 + 6i)$

$$-1 - 5i + 3 - 6i$$

$$2 - 11i$$

9) $6 - 3i - (3 + 2i) - (4 + 7i)$

10) $3 + 2 + i - 4 - 3i$

11) $4 + 4i - (6 + i) - 3 - 6i$

12) $-3 - 2i - (-6 - 3i) - (3 - 8i)$

$$-3 - 2i + 6 + 3i - 3 + 8i$$

$$9i$$

13) $6(-6 + 7i)$

14) $-4i \cdot 3i$

15) $-5i \cdot 3i \cdot -3i$

16) $(-5 - 3i)(8 + 8i)$

17) $-5i \cdot -7i(3 - 8i)$

18) $(2 + 3i)(2 - 2i)$

$$4 - 4i + 6i - 6i^2$$

$$4 + 2i - 6(-1)$$

$$4 + 2i + 6$$

$$10 + 2i$$

$$19) 2i \cdot 2i(6 - 6i)$$

$$21) 7i(-7 - 3i)(-8 - 8i)$$

$$23) 8i(7 + 3i)(-2 + 6i)$$

$$25) (5 - i)(-6 + 7i)$$

$$27) -5i(5 + i) - 7i(-7 + 6i)$$

$$29) 8 - (7 - 7i) - 4 + (4 - 5i)(-5 + i)$$

$$20) (7 - 5i)^2$$

$$(7 - 5i)(7 - 5i) \\ 49 - 35i - 35i + 25i^2 \\ 49 - 70i - 25 = \boxed{24 - 70i}$$

$$22) -6i(-7 + 4i)(-8 - i)$$

$$24) -3i(1 - 6i)(4 + i)$$

$$26) -3(-4 + 5i) - 2i(5 - 3i)$$

$$12 - 15i - 10i + 6i^2 \\ 12 - 25i - 6 \\ 6 - 25i$$

$$28) 7 - i - 3i - 4 + 8i$$

$$30) \underline{(-6 - 4i)(5 - 8i)} + \underline{(1 - i)(4 + 3i)}$$

$$\begin{array}{r} -30 + 48i - 20i + 32i^2 \\ -30 + 28i - 32 \\ -62 + 28i \end{array} \quad \begin{array}{r} 4 + 3i - 4i - 3i^2 \\ 4 - i + 3 \\ 7 - i \end{array} \\ -55 + 27i$$