Algebra 2 Name_____

Simplifying Complex Numbers

Write the expression as a complex number in standard form.

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

$-10 + 4i$

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

$-4 - 7i$

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

$-1 - 10i$

4) $(1 - 6i) + 7 - (5i)$

$8 - 11i$

5) $(5 + 5i) + (7i) + (4i)$

$5 + 16i$

6) $(3i) + 2 - (8 - 5i)$

$-6 + 8i$

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

$-14 + 9i$

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

$9 - 14i$

9) $(-7 + 8i) - (6 + i)$

$-13 + 7i$

10) $(8 + 6i) + (-2 - 2i)$

$6 + 4i$

Use FOIL to multiply and write the expression as a complex number in standard form.

11) $(-1 + 3i)(1 + 6i)$

$-19 - 3i$

12) $(7 - 7i)(4 - 3i)$

$7 - 49i$

13) $(-7 + 2i)(-4 + 4i)$

$20 - 36i$

14) $(-3 - 2i)(-7 - i)$

$19 + 17i$

15) $(5 - 5i)^2$

$-50i$

16) $(1 - 2i)(2 - i)$

$-5i$

17) $(-5 - 3i)(7 + 6i)$

$-17 - 51i$

18) $(6 + 4i)(-4 - 6i)$

$-52i$

19) $(8 - 6i)(-6 + i)$

$-42 + 44i$

20) $(-2 - 5i)(-1 - 8i)$

$-38 + 21i$

21) $(3 + 3i)(-4 + 5i)$

$-27 + 3i$

22) $(-3 + 7i)^2$

$-40 - 42i$

23) $(4 - i)(6 - 2i)$

$22 - 14i$

24) $(7 + 3i)(6 - 6i)$

$60 - 24i$

25) $(-7+3i)(-5+3i)$

$26-36i$

26) $(-8+2i)^2$

$60-32i$

27) $(7+5i)(-4-8i)$

$12-76i$

28) $(-3-6i)^2$

$-27+36i$

29) $(-7-i)^2$

$48+14i$

30) $(8+7i)(-6+4i)$

$-76-10i$

Use complex conjugates to simplify and write in standard form.

31) $\dfrac{8}{7+8i}$

$\dfrac{56}{113}-\dfrac{64i}{113}$

32) $\dfrac{-6-i}{3+10i}$

$-\dfrac{28}{109}+\dfrac{57i}{109}$

33) $\dfrac{4}{-2+2i}$

$-1-i$

34) $\dfrac{-9+2i}{5+3i}$

$-\dfrac{39}{34}+\dfrac{37i}{34}$

35) $\dfrac{5-5i}{-6+4i}$

$-\dfrac{25}{26}+\dfrac{5i}{26}$

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

$-\dfrac{5}{17}-\dfrac{3i}{17}$

37) $\dfrac{8-7i}{-2-i}$

$-\dfrac{9}{5}+\dfrac{22i}{5}$

38) $\dfrac{-10-10i}{10+6i}$

$-\dfrac{20}{17}-\dfrac{5i}{17}$

39) $\dfrac{8-7i}{-9-9i}$

$-\dfrac{1}{18}+\dfrac{5i}{6}$

40) $\dfrac{7-9i}{-7+i}$

$-\dfrac{29}{25}+\dfrac{28i}{25}$

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

$-\dfrac{7}{29}-\dfrac{3i}{29}$

42) $\dfrac{3}{4-7i}$

$\dfrac{12}{65}+\dfrac{21i}{65}$

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

$\dfrac{6}{5}-\dfrac{4i}{5}$

44) $\dfrac{-6-8i}{-3-10i}$

$\dfrac{98}{109}-\dfrac{36i}{109}$

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

$-\dfrac{15}{26}-\dfrac{29i}{26}$

46) $\dfrac{-9-6i}{-1+3i}$

$-\dfrac{9}{10}+\dfrac{33i}{10}$