

Standard 4D Review: Complex Numbers

Name: Key Hr: _____

Write each expression in simplest form.

1. $(2+3i)+(4-i)$
 $+4-i$
 $6+2i$

2. $(5+i)+(3-4i)$
 $+3-4i$
 $8-3i$

3. $(5-i)-(-3+4i)$
 $+3-4i$
 $8-5i$

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

5. $(2-i)(3+5i)$
 $11+7i$

6. $(3-2i)(3+2i)$
 13

Write each expression in simplest form.

7. $\sqrt{-64}$
 $8i$

8. $\sqrt{-49}$
 $7i$

9. $\sqrt{-48}$
 $4i\sqrt{3}$

10. $\sqrt{-54}$
 $3i\sqrt{6}$

Circle your solutions as well as show all work.

11. $x^2 - 4x = -6$
 $x^2 - 4x + 6 = 0$
 $4 \pm \sqrt{16 - 4(1)(6)}$
 $2(1)$
 $4 \pm \sqrt{-8}$ $4 \pm 2i\sqrt{2}$
 $x = 2 \pm i\sqrt{2}$

12. $3x^2 - 6 = -4x$
 $3x^2 + 4x - 6 = 0$
 $-4 \pm \sqrt{16 - 4(3)(-6)}$
 $2(3)$
 $-4 \pm \sqrt{98}$
 6
 $-4 \pm 2\sqrt{22}$
 $x = \frac{-2 \pm \sqrt{22}}{3}$

13. $6x^2 - 54 = 0$
 $6x^2 = 54$
 $x^2 = 9$
 $x = \pm 3$

14. $2x^2 + 30 = -2$
 $2x^2 = -32$
 $x^2 = -16$
 $x = \pm 4i$

15. $x^2 + 4 = -4x$
 $x^2 + 4x + 4 = 0$
 $(x+2)(x+2) = 0$
 $x = -2, -2$

16. $x^2 - 6x = -8$
 $x^2 - 6x + 8 = 0$
 $(x-2)(x-4) = 0$
 $x = 2, 4$