

Math 2 Unit 11 Worksheet 3B
Using Complex Numbers

Name: _____
Date: _____ **Per:** _____

[1-6] Solve the following equations for x . Express answers as complex numbers in simplified radical form.

1. $x^2 + 6x = -13$

2. $x^2 + 6x + 15 = 0$

3. $x^2 - 2x + 10 = 0$

4. $x^2 + 8x + 24 = 0$

5. $x^2 - 8x = -28$

6. $x^2 - 10x + 7 = 0$

7. $x^2 - 20x + 20 = 0$

8. $x^2 + 14x = -73$

Review

[9-18] Simplify.

9. $(2 + 5i) + (6 - 7i)$

10. $(7 + 3i) - (5 - 8i)$

11. $(-3i)(12i)$

12. $(5i)^2$

13. $(7i)(2i)(5i)$

14. $(3i)(4i)(5i)(6i)$

15. $(2i)^5$

16. $(6 + 4i)(5 - 2i)$

17. $(1 + 3i)(1 - 3i)$

18. $(2 + 7i)^2$

[19-21] Match the equation to what characteristics it reveals without changing the form of the equation.

19. _____ Reveals the maximum value of $m(x)$

Ⓐ $m(x) = -4(x + 8)^2 + 7$

20. _____ Reveals the zeros (x -intercepts) of $m(x)$

Ⓑ $m(x) = -4x^2 + 20x + 15$

21. _____ Reveals the y -intercept when $x = 0$

Ⓒ $m(x) = -4(x + 7)(x - 5)$