

Transitions to College Math
Chapter 4 Final Exam Review

Name: Key
Date: _____ Period: _____

1. Subtract. Write the result in standard form.

$$\begin{aligned} &(-5 - 4i) - (4 + 8i) \\ &-9 + 4i \end{aligned}$$

3. Evaluate and write your answer in standard form.

$$\begin{aligned} &\sqrt{-3} \cdot \sqrt{12} \\ &i\sqrt{3} \cdot 2\sqrt{3} \\ &2i \cdot 3 \\ &0 + 6i \end{aligned}$$

5. Simplify. Write your answer in standard form.

$$\begin{aligned} &\frac{1}{3i} \cdot \frac{i}{i} \\ &\frac{i}{3i^2} \\ &\frac{i}{-3} \end{aligned}$$

7. Solve by using the square root property.

$$\begin{aligned} &\sqrt{n^2} = \sqrt{-16} \\ &n = \pm 4i \end{aligned}$$

2. Multiply. Write the result in standard form.

$$\begin{aligned} &(4 - 6i)(4 + 6i) \\ &16 - 36i^2 \\ &16 + 36 \\ &52 + 0i \end{aligned}$$

4. Evaluate and write your answer in standard form.

$$\begin{aligned} &\sqrt{-3} \cdot \sqrt{-12} \\ &i\sqrt{3} \cdot 2i\sqrt{3} \\ &6i^2 \\ &-6 + 0i \end{aligned}$$

6. Simplify. Write your answer in standard form.

$$\begin{aligned} &\frac{3-5i}{2-i} \cdot \frac{2+i}{2+i} \\ &\frac{6-10i+3i-5i^2}{4-i^2} \\ &\frac{11-7i}{5} \end{aligned}$$

8. Solve by using the square root property.

$$\begin{aligned} &\sqrt{(t-2)^2} = \sqrt{-9} \\ &t-2 = \pm 3i \\ &t = 2 \pm 3i \end{aligned}$$

9. Solve. $x^2 - 4x + 7 = 0$

$$x^2 - 4x + 4 = -7 + 4$$

$$\sqrt{(x-2)^2} = \sqrt{-3}$$

$$x - 2 = \pm i\sqrt{3}$$

$$x = 2 \pm i\sqrt{3}$$

10. Solve. $x^2 = 3x + 1$

$$x^2 - 3x - 1 = 0$$

$$x = \frac{3 \pm \sqrt{9 - 4(1)(-1)}}{2(1)}$$

$$x = \frac{3 \pm \sqrt{13}}{2}$$

11. Solve. Be sure to check your solution!

$$x = \sqrt{x+2}$$

$$x^2 = x + 2$$

$$x^2 - x - 2 = 0$$

$$(x-2)(x+1) = 0$$

$$x = 2 \quad x = -1$$

$$2 = \sqrt{2+2}$$

$$2 = \sqrt{4} \quad \checkmark$$

$$-1 = \sqrt{-1+2}$$

$$-1 \neq \sqrt{1}$$

12. Solve. Be sure to check your solution!

$$\sqrt{x-4} = 2$$

$$x - 4 = 4$$

$$x = 8$$

$$\sqrt{8-4} = 2$$

$$\sqrt{4} = 2 \quad \checkmark$$