

REVIEW 5.5-5.6

NAME

Key 10-15-12

1. Solve for solutions.

$x^2+121=0$

$x^2 = -121$
 $x = \pm \sqrt{-121}$

$x = \pm 11i$

2. Express in terms of i .

$\sqrt{-490}$

$\sqrt{-1 \cdot 49 \cdot 10}$

$7i\sqrt{10}$

3. Find the zeros of the function.

$f(x) = x^2 + 8x + 23$

$x^2 + 8x = -23$
 $x^2 + 8x + (\frac{8}{2})^2 = -23 + (\frac{8}{2})^2$

$(x+4)^2 = -23 + 16$
 $(x+4)^2 = -7$

$x+4 = \pm \sqrt{-7}$
 $x = -4 \pm i\sqrt{7}$

4. Find the value of the discriminant. State the type and number of solutions for the equation.

$x^2 - 12x + 36 = 0$

$a = 1$
 $b = -12$
 $c = 36$

$b^2 - 4ac = (-12)^2 - 4(1)(36) = 144 - 144 = 0$

2 Real Solutions

5. Solve for imaginary solutions.

$5(\frac{1}{5}x^2) = +5$

$x^2 = -25$

$x = \pm \sqrt{-25}$

$x = \pm 5i$

6. Find each complex conjugate.

$7-4i$

$7+4i$

7. Write the quadratic formula.

$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \quad a \neq 0$

8. Solve the quadratic equation by using the quadratic formula.

$-x^2 + 3x + 5 = 0$

$a = -1$
 $b = 3$
 $c = 5$

$\frac{-3 \pm \sqrt{(3)^2 - 4(-1)(5)}}{2(-1)}$
 $\frac{-3 \pm \sqrt{9+20}}{-2}$
 $\frac{-3 \pm \sqrt{29}}{-2}$

9. What part of the quadratic formula is the discriminant?

$b^2 - 4ac$

$x = \frac{3 \pm \sqrt{29}}{-2}$

10. Find the value of the discriminant. State the type and number of solutions for the equation.

$x^2 - 12x = -36$

$a = 1$
 $b = -12$
 $c = 36$

$b^2 - 4ac = (-12)^2 - 4(1)(36) = 144 - 144 = 0$

Three = Real Number = 1

11. Find the zeros of the function.

$f(x) = 5x^2 + 20x + 35$

$a = 5$
 $b = 20$
 $c = 35$

$a = 1$
 $b = 4$
 $c = 7$

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

12. Solve the quadratic equation by using the quadratic formula.

$x^2 + 12 = x$

$a = 1$
 $b = -1$
 $c = 12$

$x^2 - x + 12 = 0$

$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

$\frac{-(-1) \pm \sqrt{(-1)^2 - 4(1)(12)}}{2(1)}$

$\frac{1 \pm \sqrt{1-48}}{2} = \frac{1 \pm \sqrt{-47}}{2}$

$x = \frac{1 \pm i\sqrt{47}}{2}$