

# Key

## Adv Alg 2

## Chapter 4 Review Worksheet NO GRAPHING CALCULATORS!!

For 1-7, simplify. Write answers in standard complex form.

1.  $i^{73}$   $i$

2.  $(15 + 2i) + (-8 + 7i)$   
 $7 + 9i$

3.  $(17 - 11i) - (12 - 2i)$   
 $5 - 9i$

4.  $(4 - 2i)(8 + 5i)$   
 $42 + 4i$

5.  $\frac{5-4i}{2i}$   
 $-2 - 5/2 i$

6.  $\frac{8}{3+i}$   
 $12/5 - 4/5 i$

7.  $\frac{9-3i}{4+5i}$   
 $21/41 - 57/41i$

For 8-15, factor completely.

8.  $81y^2 - 49$   $(9y + 7)(9y - 7)$

9.  $8cw - 12cy - 6wx + 9xy$   
 $(2w-3y)(4c-3x)$

10.  $12a^2 - 5a - 3$   $(4a-3)(3a + 1)$

11.  $6z^2 + 54$   $6(z^2+9)$

12.  $27x^3 - 8y^3$   
 $(3x - 2y)(9x^2+6xy+4y^2)$

13.  $c^3 - 5c^2 - 6c$   
 $c(c-6)(c+1)$

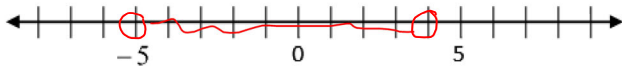
14.  $8x^2 - 10xy - 3y^2$   
 $(4x+y)(2x-3y)$

15.  $4 + 108x^3$   
 $4(1+3x)(1-3x+9x^2)$



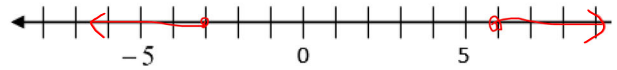
Directions: For 21 and 22, solve the quadratic inequality. Show all work!

21.  $x^2 + x < 20$



$-5 < x < 4$

22.  $2x^2 - 6x \geq 36$



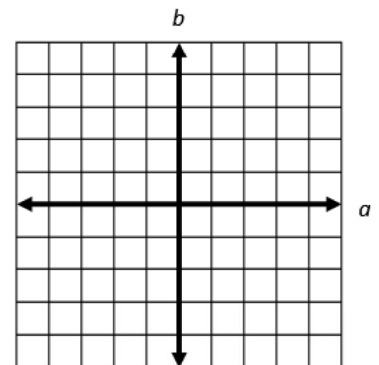
$x \leq -3$  or  $x \geq 6$

Directions: In 23, solve the system of quadratics using substitution.

23.  $y = 3x^2 + x - 8$   
 $y = 2x^2 + 3x + 7$

$(-3, 16), (5, 72)$

24. Graph  $2 - 5i$



25. Find  $|2 - 5i|$

$\sqrt{29}$