Name:_____

Algebra 2
Chapter 4 Test – Part 2 Review

Simplify.

1. i^{67}

16 R 3
$4\overline{)67}$
4
27
24
3

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

$6-4i+3+4i$

3. $(2+i)(4-7i)$

$8-14i+4i-7i^2$
$8-10i+7$

4. $\frac{-3}{7+2i}$ $(7-2i)$ $(7-2i)$

$\frac{-21+6i}{49-14i+14i-4i^2} = \frac{-21+6i}{49+4}$

5. $|-2+3i|$

$\sqrt{(-2)^2+(3)^2}$
$\sqrt{4+9}$
$\sqrt{13}$

6. $\frac{(3-2i)}{(4-3i)}$ $(4+3i)$ $(4+3i)$

$\frac{12+9i-8i-6i^2}{16-12i+12i-9i^2} = \frac{12+i+6}{16+9}$

Find the discriminant. Circle which description applies based on the discriminant value.

7. $2x^2+5x+8=0$

b^2-4ac
$(5)^2-4(2)(8)$
$25-64$
-39

7. Discriminant Value: -39

Circle one:

One Sol.

Two Sols.

(No Sol.)

8. Solve by the quadratic formula: $x^2-10x=-22$

$x^2-10x+22=0$

$\frac{10\pm\sqrt{100-4(1)(22)}}{2(1)}$ $\frac{10\pm\sqrt{100-88}}{2}$ $\frac{-10\pm\sqrt{12}}{2} = \frac{10\pm2\sqrt{3}}{2}$

8. $5\pm\sqrt{3}$

9. Solve by the quadratic formula: $x^2-2x+10=0$

$\frac{2\pm\sqrt{4-4(1)(10)}}{2(1)}$ $\frac{2\pm\sqrt{4-40}}{2} = \frac{2\pm\sqrt{-36}}{2} = \frac{2\pm6i}{2}$

9. $1\pm3i$

1. $-i$
2. 9
3. $15-10i$
4. $\frac{-21+6i}{53}$
5. $\sqrt{13}$
6. $\frac{18+i}{25}$

10. Solve by completing the square: $x^2 + 8x + 6 = 0$

$x^2+8x+16 = -6+16$

$\frac{8}{2}=4^2=16$

$\sqrt{(x+4)^2}=\sqrt{10}$

$x+4=\pm\sqrt{10}$

11. Fill in the blanks to complete the square:

$x^2 - 10x + \underline{25} = (x - \underline{5})^2$

$\frac{-10}{2}=-5$

10. $x=-4\pm\sqrt{10}$

11.

First blank: 25

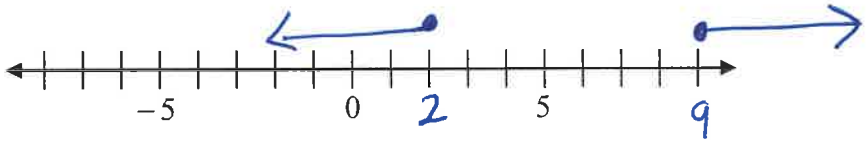
Second blank: 5

12. Solve and graph the Quadratic inequality: $11x - 18 \leq x^2$

$0 \leq x^2-11x+18$

$0\leq(x-9)(x-2)$

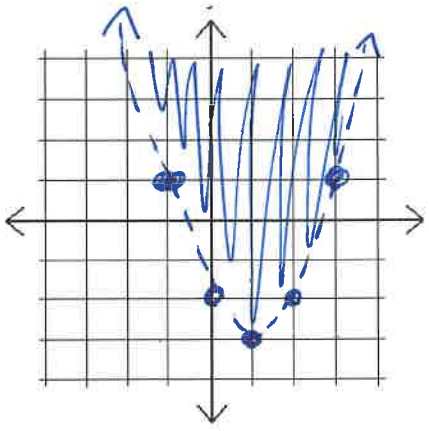
$x=9,\ x=2$



12. $x\leq -2$ OR $x\geq 9$

13. Graph the quadratic inequality.

$y > (x-1)^2 - 3$



13. See left.