Algebra 2 Honors - Mr. Allen-Black Name_____ ID: 1

Quadratics (Part 3) TEST

Date_____ Period____

Factor each completely.

1) $7n^2 + 60n + 32$

2) $9v^2 + 8v - 20$

Solve each equation by factoring.

3) $2a^2 - 16a + 28 = 4$

4) $19m^2 - 76m + 80 = 4m^2 + 4m$

Solve each equation with the quadratic formula.

5) $7x^2 - 8x - 13 = -7$

6) $-7x^2 + 2x - 15 = -8$

Find the value that completes the square and then rewrite as a perfect square.

7) $z^2 - 6z + \_\_$

8) $r^2 + \frac{3}{17}r + \_\_$

Solve each equation by completing the square.

9) $a^2 - 4a - 5 = 0$

10) $9x^2 + 18x - 19 = 8$

Use Completing the Square to convert from standard form to vertex form.

11) $y = 3x^2 + 42x + 144$

12) $y = x^2 + 4x - 5$

Simplify. Your answers must be in *a* + *bi* format.

13) $(-7 + 3i) - (-8 - 3i)$

14) $(1 - 8i) - (-4 + 2i)$

15) $(6i)(8i)$

16) $(5i)(-2i)(3i)$

17) $(1 + 2i)(7 + 9i)$

18) $(-3 - 7i)(-2 + i)$

19) $(-8 - i)(-6 - 2i)$

20) $\dfrac{10 + 9i}{10i}$

21) $\dfrac{2}{10 - 6i}$

22) $\dfrac{4 + 3i}{-2 + 6i}$

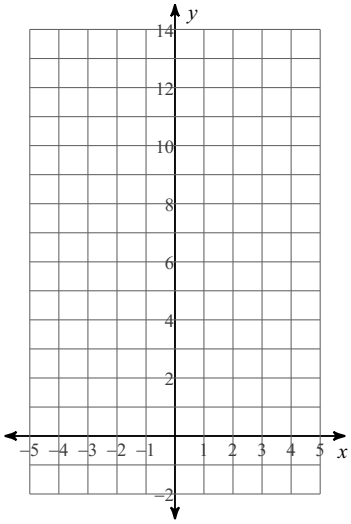
Solve each system by substitution.

23) $y = x^2 - 2x + 1$
$y = 2x + 1$

24) $y = -x^2 - 3x + 2$
$y = x + 6$

Solve the system of equations by graphing.

25) $y = -x^2 + 2x + 10$
$y = x + 4$



Quadratics (Part 3) TEST

Date_____ Period____

Factor each completely.

1) $7n^2 + 60n + 32$

$(7n + 4)(n + 8)$

2) $9v^2 + 8v - 20$

$(v + 2)(9v - 10)$

Solve each equation by factoring.

3) $2a^2 - 16a + 28 = 4$

$\{6, 2\}$

4) $19m^2 - 76m + 80 = 4m^2 + 4m$

$\left\{\frac{4}{3}, 4\right\}$

Solve each equation with the quadratic formula.

5) $7x^2 - 8x - 13 = -7$

$\left\{\frac{4 + \sqrt{58}}{7}, \frac{4 - \sqrt{58}}{7}\right\}$

6) $-7x^2 + 2x - 15 = -8$

$\left\{\frac{1 - 4i\sqrt{3}}{7}, \frac{1 + 4i\sqrt{3}}{7}\right\}$

Find the value that completes the square and then rewrite as a perfect square.

7) $z^2 - 6z + \_\_$

$9;\ (z-3)^2$

8) $r^2 + \frac{3}{17}r + \_\_$

$\frac{9}{1156};\ \left(r + \frac{3}{34}\right)^2$

Solve each equation by completing the square.

9) $a^2 - 4a - 5 = 0$

$\{5, -1\}$

10) $9x^2 + 18x - 19 = 8$

$\{1, -3\}$

Use Completing the Square to convert from standard form to vertex form.

11) $y = 3x^2 + 42x + 144$

$y = 3(x+7)^2 - 3$

12) $y = x^2 + 4x - 5$

$y = (x+2)^2 - 9$

Simplify. Your answers must be in *a* + *bi* format.

13) $(-7 + 3i) - (-8 - 3i)$

$1 + 6i$

14) $(1 - 8i) - (-4 + 2i)$

$5 - 10i$

15) $(6i)(8i)$

-48

16) $(5i)(-2i)(3i)$

$30i$

17) $(1 + 2i)(7 + 9i)$

$-11 + 23i$

18) $(-3 - 7i)(-2 + i)$

$13 + 11i$

19) $(-8 - i)(-6 - 2i)$

$46 + 22i$

20) $\dfrac{10 + 9i}{10i}$

$\dfrac{-10i + 9}{10}$

21) $\dfrac{2}{10 - 6i}$

$\dfrac{5 + 3i}{34}$

22) $\dfrac{4 + 3i}{-2 + 6i}$

$\dfrac{1 - 3i}{4}$

Solve each system by substitution.

23) $y = x^2 - 2x + 1$
$y = 2x + 1$

$(0, 1)$ $(4, 9)$

24) $y = -x^2 - 3x + 2$
$y = x + 6$

$(-2, 4)$

Solve the system of equations by graphing.

25) $y = -x^2 + 2x + 10$
$y = x + 4$