Honors Algebra 2

Name_____

Unit 1 Quiz REVIEW

Date_____

Complex Operations. Show all work WITHOUT a calculator.

1) $(-2 + 8i) - (-7 + 2i)$

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

3) $(4i)(5 - 5i) + 3(7i)$

4) $(-7 - 4i)^2$

5) $\dfrac{-4 - 2i}{-6i}$

6) $\dfrac{5 + 4i}{3 - 9i}$

Factor each completely.

7) $x^2 - x - 56$

8) $2p^3 + 15p^2 + 25p$

9) $7v^2 - 57v + 8$

10) $5k^2 + 8k$

11) $50k^2 - 8$

12) $4x^2 + 12x + 9$

Solve each equation by factoring.

13) $2n^2 - 16n + 14 = 0$

14) $5n^2 + 42n = -49$

15) $9x^2 + 6x = 8x^2$

16) $x^2 - 12x + 4 = -8x$

Solve each equation by completing the square.

17) $r^2 - 12r - 53 = 9$

18) $a^2 + 44 = -2a$

Solve each equation by taking square roots.

19) $5x^2 - 7 = 173$

20) $5r^2 + 4 = -61$

Solve each equation with the quadratic formula.

21) $9v^2 + 2v - 1 = -3$

22) $-4x^2 + 11x + 19 = 2x^2 + 12$

23) $2n^2 - 12n = -15$

24) $x^2 - 10x = -4$

Find the discriminant of each quadratic equation then state the number and type of solutions.

25) $5n^2 + 8n - 4 = 0$

26) $-4a^2 - 6 = -a^2 - 4a$

Name_____

Unit 1 Quiz REVIEW

Date_____

Complex Operations. Show all work WITHOUT a calculator.

1) $(-2 + 8i) - (-7 + 2i)$

$5 + 6i$

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

$98 + 56i$

3) $(4i)(5 - 5i) + 3(7i)$

$20 + 41i$

4) $(-7 - 4i)^2$

$33 + 56i$

5) $\dfrac{-4 - 2i}{-6i}$

$\dfrac{-2i + 1}{3}$

6) $\dfrac{5 + 4i}{3 - 9i}$

$\dfrac{-7 + 19i}{30}$

Factor each completely.

7) $x^2 - x - 56$

$(x + 7)(x - 8)$

8) $2p^3 + 15p^2 + 25p$

$p(2p + 5)(p + 5)$

9) $7v^2 - 57v + 8$

$(7v - 1)(v - 8)$

10) $5k^2 + 8k$

$k(5k + 8)$

11) $50k^2 - 8$

$2(5k + 2)(5k - 2)$

12) $4x^2 + 12x + 9$

$(2x + 3)^2$

Solve each equation by factoring.

13) $2n^2 - 16n + 14 = 0$

$\{7, 1\}$

14) $5n^2 + 42n = -49$

$\left\{-\dfrac{7}{5}, -7\right\}$

15) $9x^2 + 6x = 8x^2$

$\{-6, 0\}$

16) $x^2 - 12x + 4 = -8x$

$\{2\}$

Solve each equation by completing the square.

17) $r^2 - 12r - 53 = 9$

$\left\{6 + 7\sqrt{2}, 6 - 7\sqrt{2}\right\}$

18) $a^2 + 44 = -2a$

$\left\{-1 + i\sqrt{43}, -1 - i\sqrt{43}\right\}$

Solve each equation by taking square roots.

19) $5x^2 - 7 = 173$

$\{6, -6\}$

20) $5r^2 + 4 = -61$

$\left\{i\sqrt{13}, -i\sqrt{13}\right\}$

Solve each equation with the quadratic formula.

21) $9v^2 + 2v - 1 = -3$

$\left\{\dfrac{-1 + i\sqrt{17}}{9}, \dfrac{-1 - i\sqrt{17}}{9}\right\}$

22) $-4x^2 + 11x + 19 = 2x^2 + 12$

$\left\{-\dfrac{1}{2}, \dfrac{7}{3}\right\}$

23) $2n^2 - 12n = -15$

$\left\{\dfrac{6 + \sqrt{6}}{2}, \dfrac{6 - \sqrt{6}}{2}\right\}$

24) $x^2 - 10x = -4$

$\left\{5 + \sqrt{21}, 5 - \sqrt{21}\right\}$

Find the discriminant of each quadratic equation then state the number and type of solutions.

25) $5n^2 + 8n - 4 = 0$

144; two real solutions

26) $-4a^2 - 6 = -a^2 - 4a$

−56; two imaginary solutions