Algebra 2 Unit 3 Review 1

HW #47: SHOW ALL WORK on a separate piece of paper.

1. Solve using factoring: $2x^2 - 3x - 5 = 0$
2. Solve using factoring $3x^2 + 24x = -48$
3. Solve by square roots $-3(x+9)^2 = -63$
4. Solve by square roots $2(x+8)^2 - 10 = 98$
5. Solve by the quadratic formula: $4x^2 - 8x + 1 = 0$
6. Solve by the quadratic formula $6x^2 - 8x = -3$

Problems 7 - 10, solve using any method.

7. $3x^2 = x + 14$
8. $4x^2 - 12x - 16 = 0$
9. $-x^2 + 4 = 2x^2 - 5$
10. $4 - 2x^2 = 12$
11. Find the zeros of $4x^2 - 5x - 21 = y$
12. Use the discriminant to determine the number and type of solutions of the equation. $4x^2 - 3x - 7 = 0$
13. Use the discriminant to determine the number type of solutions of the equation. $5x^2 - 3x + 1 = 0$

Problems 14 - 19, write the expression as a complex number in standard form.

14. $(-2+4i) - (3+9i)$
15. $-i + (7-5i) - 3(2-3i)$
16. $3i(6-5i)$
17. $(2+3i)(1-4i)$
18. $(2i)(1-4i)(1+i)$
19. $\dfrac{8+7i}{3-4i}$

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Answer Section

1. $\frac{5}{2}, -1$
2. -4
3. $-9 \pm \sqrt{21}$
4. $-8 \pm 3\sqrt{6}$
5. $\frac{2-\sqrt{3}}{2}, \frac{2+\sqrt{3}}{2}$
6. $\frac{4 \pm i\sqrt{2}}{6}$
7. $\frac{7}{3}, -2$
8. $-1, 4$
9. $x = \pm\sqrt{3}$
10. $\pm 2i$
11. $x = 3$ and $x = -\frac{7}{4}$
12. 2 real solutions
13. 2 imaginary
14. $-5 - 5i$
15. $1 + 3i$
16. $15 + 18i$
17. $14 - 5i$
18. $6 + 10i$
19. $\frac{4}{25} + \frac{53}{25}i$