Test Chapter 5 and 6.1 Algebra II Name _____

SHOW ALL WORK

I. Multiple Choice

_____ 1. How can you solve $b^2 + 4b = 21$?
A. Factor $b^2 + 4b$ and set each factor equal to 21.
B. Factor $b^2 + 4b$ and set one factor equal to 7 and the one factor equal to 3.
C. Factor $b^2 + 4b$ and set each factor equal to 0.
D. Factor $b^2 + 4b + 21$ and set each factor equal to 0.
E. Factor $b^2 + 4b - 21$ and set each factor equal to 0.

_____ 2. Write $(4x)^{-2} y^{-3} z^2$ in simplest form with no negative exponents.
A. $\frac{1}{16x^2y^3}$ B. $\frac{1}{4x^2y^3}$ C. $\frac{z}{16x^2y^3}$ D. $\frac{z}{4x^2y^3}$ E. $16x^2y^3$

_____ 3. Solve $6x^2 + 5x - 4 = 0$ for x?
A. $x = -1, \frac{2}{3}$ B. $x = -\frac{1}{2}, 2$ C. $x = \frac{1}{2}, -\frac{4}{3}$ D. $x = 4, -\frac{1}{6}$

_____ 4. Which of the following is the factorization of $16a^2 + 50a - 21$?
A. (2a – 3) (8a + 7)
B. (2a + 3) (8a – 7)
C. (2a + 7) (8a – 3)
D. (2a – 7) (8a + 3)
E. (16a – 7) (a + 3)

_____ 5. What would be your first step in completely factoring $6a^2 - 15a + 6$?
A. Look for factors of $6a^2$ and 6.
B. Factor out a common factor of a.
C. Factor out a common factor of 6.
D. Factor out a common factor of 3.
E. It is completely factored .

II. Simplify the following:

_____ 6. $(4x^3 + 2x + 5) - (2x^2 + 4x + 1)$

_____ 7. $3xy\ (6x^2 + 2xy + y^2)$

_____ 8. $(3w^3 - 2w^2 + 1 - w) + (4w^2 - 5w^3 + 4w + 7)$

_____ 9. $\left(12x^2y^2\right)^0\left(x^2\right)^3\left(y^2\right)^5$

_____ 10. $(3a^2 + 4a - 2)\ (a - 7)$

_____ 11. $27xy^3 \div 81xy$

III. Factor the following completely:

_____ 12. $5n + nt^2$

_____ 13. $x^2 + 8x + 16$

_____ 14. $50\ a^2 + 145a - 105$

_____ 15. $2x^7 - 50x$

_____ 16. $8x^3 + 1$

_____ 17. $2xy + 3x + 8y + 12$

IV. Solve and check.

_____ 18. $k^2 + 6k + 9 = 0$

_____ 19. $y^2 + y - 12 = 0$

_____ 20. The area of a rectangle is 48 square meters. Its length is 13 meters more than its width. Determine the dimensions of the rectangle. You must solve this by factoring to receive full credit.