Test Chapter 5 and 6.1 Algebra II Name _____

SHOW ALL WORK

I. Multiple Choice

_____ 1. Which of the following is the factorization of $16a^2 + 50a - 21$?

A. $(2a - 3)(8a + 7)$ C. $(2a + 7)(8a - 3)$
B. $(2a + 3)(8a - 7)$ D. $(2a - 7)(8a + 3)$
E. $(16a - 7)(a + 3)$

_____ 2. 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 .

_____ 3. 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.

_____ 4. 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. $16x^2y^3$

_____ 5. 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. $x = 4, -\frac{1}{6}$

II. Simplify the following:

_____ 6. $\left(12x^2y^2\right)^0\left(x^2\right)^3\left(y^2\right)^5$

_____ 7. $(3a^2 + 5a - 2)\ (a - 7)$

_____ 8. $27xy^2 \div 81xy$

_____ 9. $(4x^3 + 3x + 5) - (2x^2 + 4x + 1)$

_____ 10. $5xy\ (4x^2 + 2xy + y^2)$

_____ 11. $(3w^3 - w^2 + 4 - w) + (4w^2 - 2w^3 + 4w + 7)$

III. Factor the following completely:

_____ 12. $n + nt^2$

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

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

_____ 15. $2x^9 - 50x$

_____ 16. $8x^3 + 27$

_____ 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 8 meters more than its width. Determine the dimensions of the rectangle. You must solve this by factoring to receive full credit.