Unit 5 day 2 notes Name_____

Bell Work

Find the sum, difference or product.

1. $(z^2 + 5z - 7) + (5z^2 - 11z - 6)$

2. $(2a - 3)(a^2 - 10a - 2)$

Factor the polynomial completely.

(GCF)

3. $x^3 - 7x^2 + 10x$

4. $3x^6 + 12x^4 - 96x^2$

5. $2y^5 - 18y^3$

6. $4z^4 - 16z^3 + 16z^2$

**new factoring patterns:
sum and difference of perfect cubes

sum of cubes

$a^3 + b^3 = (a + b)(a^2 - ab + b^2)$

difference of cubes

$a^3 - b^3 = (a - b)(a^2 + ab + b^2)$

7. $w^3 – 27$

8. $125n^3 + 216$

9. $8c^3 + 343$

10. $16x^5 - 250x^2$

Factoring by grouping

11. $x^3 - 3x^2 - 16x + 48$

12. $x^3 + 7x^2 - 9x - 63$

Solve:

13. $18s^3 = 50s$

14. $m^3 + 6m^2 - 4m - 24 = 0$

15. $a^4 + 7a^2 + 6 = 0$

16. $15x^5 - 72x^3 - 108x = 0$

17. $4x^5 - 40x^3 + 36x = 0$

18. $2x^5 + 24x = 14x^3$

19. $x^3 - 64 = 0$

20. $8x^3 + 27 = 0$