Name:_____
Date:_____
Period:_____

Directions: Please answer the following questions. **Show work!!**
Simplify. Please pay attention to which operation to use.

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

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

3. $(9x^2 - x + 7) - (3x^2 + 6x - 4)$

4. $(5n^3 + 3n + 6) + (18n^3 + 9)$

5. $(x^2 + 5)(x - 9)$

6. $-3a^5 + 11 - 15a^2 - 6 + 14a^2 + 7a$

7. $(x + 10)^2$

8. $(5x + 9) - (4x^2 - 3x + 8)$

9. $6x^3(8x^5 - 4x + 2)$

10. $(6y^2 - 4y + 9) - (2y^2 - 8y + 12)$

Solve.

11. $5x + 2x - 20 = 3x - 8$

12. $\dfrac{3}{5}a + 7 = 28$

Solve.

13. 0.2m + 3.6 = 4.5m − 2.8

14. 10 − 18 = 6x − 4x

15. Name the polynomial

a) 3x − 7y + 2

b) x − 7

c) 21

d) -12x² − 2

Simplify each square root.

16. $\sqrt{80}$

17. $\sqrt{16y^2}$

18. $\sqrt{147}$

Simplify using the rules of exponents.

19. $\left(3x^2yz^{-3}\right)^4$

20. $\dfrac{30ab^6}{6a^5b^2}$

21. $4m^{12}n^4 \bullet 6m^{-9}n$