Name _____ Class _____ Date _____

8-1 Practice *Form K*

Adding and Subtracting Polynomials

Find the degree of each monomial.

1. $3s^3t^3$ **6**

2. $3n$ **1**

3. $5xy$ **2**

4. 7 **0**

5. $\frac{1}{4}k^5$ **5**

6. d **1**

Simplify.

7. $3mn^4 + 6mn^4$ **$9mn^4$**

8. $12g^2 - 7g^2$ **$5g^2$**

9. $-11c^4d + 12c^4d$ **c^4d**

10. $42z^3 - 15z^3$ **$27z^3$**

Write each polynomial in standard form. Then name each polynomial based on its degree and number of terms.

11. $7a + 4 - a^2$

$-a^2 + 7a + 4$; quadratic trinomial

12. $5b^2 + 2n$

$5b^2 + 2n$; quadratic binomial

13. $-11d^4$

$-11d^4$; 4th degree monomial

14. $2x^3 - 9 + 2x + 8 - 4x$

$2x^3 - 2x - 1$; cubic trinomial

15. A pizza shop owner is monitoring the amount of cheese he uses each week. The polynomials below model the pounds of cheese ordered in the past, where p represents pounds.

Mozzarella: $3p^3 - 6p^2 + 14p + 125$

Cheddar: $12.5p^2 + 18p + 75$

Write a polynomial that models the total number of pounds of cheese that were ordered.

$3p^3 + 6.5p^2 + 32p + 200$

Name _____ Class _____ Date _____

8-1 Practice (continued) *Form K*

Adding and Subtracting Polynomials

Simplify.

16. $\begin{array}{r} 3r + 5 \\ +\ 7r + 3 \\ \hline \end{array}$

10r + 8

17. $(t^4 - 4t^2 + 9) + (-t^3 + 3t)$

$t^4 - t^3 - 4t^2 + 3t + 9$

18. $\begin{array}{r} 7b^2 + 6 \\ +\ 4b^2 + 5 \\ \hline \end{array}$

$11b^2 + 11$

19. $\begin{array}{r} 4z + 7 \\ -\ (6z + 1) \\ \hline \end{array}$

$-2z + 6$

20. $(-6k^3 + 3k) - (-5k^3 + 3k^2 - 8k)$

$-k^3 - 3k^2 + 11k$

21. $\begin{array}{r} 3p^4 + 1 \\ -\ (9p^4 + 5) \\ \hline \end{array}$

$-6p^4 - 4$

22. A city wants to compare the number of people who own their own home and who rent their home. The polynomials below show expressions for each. In each polynomial, $p = 0$ corresponds to the first year.

Own: $4p^2 + 360p + 22{,}178$

Rent: $6p^2 + 125p + 5286$

Write a polynomial for how many more own their home than rent their home.

$-2p^2 + 235p + 16{,}892$

23. The wallpaper border that runs all the way around a room is $5f^2 + 19f + 11$ long. Three sides of the room have the following lengths of border: $6f$, $5f - 7$, $2f^2 + 2$. What is the length of the fourth side of the room?

$3f^2 + 8f + 16$

24. Open-Ended Write two different polynomials with a difference of $-3x^2 + 5x - 7$.

Answers may vary. Sample: $(-1x^2 + 6x - 4) - (2x^2 + x + 3)$ and $(-4x^2 + 7x - 5) - (-x^2 + 2x + 2)$