

Name: _____

1. Answer the questions or identify the specified parts of the polynomial:

$$5x^3 - 2x^2 + 14x + 7x^2 + 3x - 11$$

- a. How many terms does this polynomial have? _____
- b. Write the term that has a degree of 3. _____
- c. What is the coefficient of this term with degree 3? _____
- d. Which term is a constant term? _____
- e. List a pair of like terms. _____ and _____
- f. List another pair of like terms. _____ and _____
- g. Rewrite the polynomial in simplified form by combining the like terms:

- h. Evaluate this polynomial for $x = 2$. _____

2. Answer the questions or identify the specified parts of the polynomial:

$$2ab^2 + 3a^2b - 6b - 2a^2b + 3a - b$$

- a. How many terms does this polynomial have? _____
- b. Write the term(s) that have a degree of 1. _____
- c. What are the coefficients of the term(s) with degree 1? _____
- d. Which term is a constant term? _____
- e. List a pair of like terms. _____ and _____
- f. List another pair of like terms. _____ and _____
- g. Rewrite the polynomial in simplified form by combining the like terms:

- h. Evaluate this simplified polynomial for $a = 4$ and $b = -1$

Simplify each of these polynomial expressions by combining like terms:

(Hints: Change all subtraction to addition of a negative and group all like terms before combining)

3. $5a + 7 - 2a$

4. $12b - 5c + 5b + 1$

5. $14z + 11 - 5z$

6. $3 - 11y - 8 - y$

7. $x^2 - 4x + 7 - 2x$

8. $3y^2 + 8y - 5 - y^2 + 14$

9. $2x^2 - 4 - 3x + x^2 - 7$

10. $4w + 7 - 2w + 5 - 2w$

11. $-3a + b + 5ab - 8a - 3ab + 2b$

12. $4rs^2 - 6r^2s + 3rs - 3r^2s + rs^2$

13. $11z^3 - 11z^2 + 4z^3 + 2z - z^2 + 1$

14. $3k + 5m - 2mk + 4 + 4mk - 4k$

15. $6 - 9p + 11 - 2p + p - 8 + r$

16. $4a^2 + 5ab - 6b^2 + ab - 8 + 2b^2$

Challenge: Simplify the expressions

17. $-2w^5 + 5w^3 - w^2 + 11w^4 - 8w^3 + 2 + 2w^2 - w^5 - 9$

18. $7y^2 + 13xy - 2x^2 + y^2 - 11 - 8xy + 3x^2 - 4 - xy - y^2$

19. $2m^2n + 10mn^2 + 8n^2 - 5mn - 16 + 3nm - m^2 + 13 + 5nm^2 - 3mn^2 - 2m^2 + n^2 + 1$