Classifying & Simplifying Polynomials

Classify the following polynomials by <u>degree</u> and <u>number of terms</u>.

1. $4p^3 + 2p^2 + 19p - 5$

1. _____

2. $5x^4 + 12$

2. _____

3. $n^2 - 7n - 21$

3. _____

4. 3

4. _____

5. $2x + 7$

5. _____

6. $-8y^2$

6. _____

Simplify the following polynomials. All final answers must be in <u>standard form</u>. Box answers.

7. $(3y^2 - 4y + 1) + (-y^2 + y - 2)$

8. $(2m^2 - 8m + 2) - (-3m^2 + 5m - 7)$

9. $(7 - 4k^2 + k) + (8k + 5k^2 - 7)$

10. $(6x^2 - 5x) - (4x^2 - 3x + 4)$

11. $3a(6a^2 - 4ab^2) + 8a^2b^2 - 2b^3$

12. $-2x(x^3 - 6x^2 + 6) + 4x^3 - (5x^4 + 10x)$

13. $(x - 4)(x + 6)$

14. $(2m - 3)(6m + 1)$

15. $(5a + b)(a - 4b)$

16. $(7a - 1)^2$

17. $(x - 10)(x + 10)$

18. $(n - 9)(n^2 + 4n - 10)$
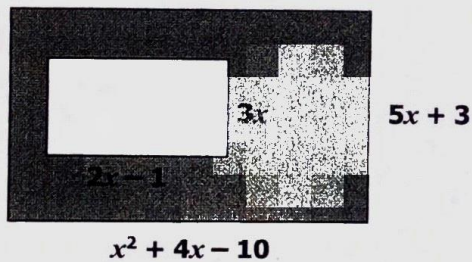
19. $(3x + 5)(4x^2 - 5x - 3)$

20. $\dfrac{6x^3 - 15x^2 - 3x}{3x}$
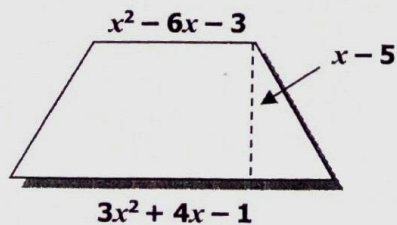
21. $\dfrac{32a^8b^6 - 12a^5b^4c^2}{4a^3b^2}$

22. $\dfrac{7x^3 + 4x^2 + 2x}{x^2}$

23. Subtract $(a^2 - 8ab + 2b^2)$ from $(5a^2 - 9ab + 2b^2)$

24. Find the area of the shaded region:

$3x$ $5x + 3$

$2x - 1$

$x^2 + 4x - 10$

BONUS: Write an expression to represent the area of the trapezoid below. Show all work.

$x^2 - 6x - 3$

$x - 5$

$3x^2 + 4x - 1$

$A = \dfrac{1}{2}(b_1 + b_2) \cdot h$