

Show all of your work so that you are eligible for partial credit!!

1. List all of the positive and negative factors of 24.

2. Find the GCF of the numbers and of the variables of $18x^2y^3$ and $30x^3y$

Add or subtract the following polynomials. Remember to simplify by combining like terms!

3. $(3x^4 - 2x^3 + 5x^2) + (7x^2 + 9x^3 - 2x)$
4. $(7x^2 - 3x + 6) + (9x^2 + 6x - 11)$

5. $(2x^2 + 7) + (7x^2 + 4x - 3)$
6. $(4x^2 - x + 8) + (7x^2 - 2x - 3)$

7. $(3x^2 - 9x) - (2x^2 - 5x + 6)$
8. $(11x^2 + 6x - 1) - (2x^2 - 7x + 5)$

9. $(7x^3 - 6x + 4) - (9x^3 - 5x^2 - x)$
10. $(x^2 - 15x + 10) - (-12x^2 + 8x - 1)$

Multiply the following by distributing and simplify by combining like terms if possible.

11. $3x^3(2x^3 - x^2 - 5x + 3)$

12. $2x^2(x^3 + 2x^2 + x + 3)$

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

14. $(2x-1)(x+4)$

15. $(2x + 1)(x^2 + 3x + 1)$

16. $(4x - 1)^2$

Factor by taking out the GCF of the numbers and of the variables.

17. $10x - 20$

18. $8x^3 - 28x$

19. $15x + x^2$

20. $24x + 16y$

Factor each of the following. **Hint: you want something that looks like this ()()

21. $x^2 + 5x + 4$

22. $x^2 + 7x + 10$

23. $x^2 - 6x + 8$

24. $x^2 - 3x - 18$

Factor, and then solve for x.

25. $2x^2 + 9x - 5$

26. $3x^2 + 5x + 2$

Factor the perfect square binomials. (first make sure each term is a "squared" term)

27. $x^2 - 9$

28. $x^2 - 36$

29. $16x^2 - 25$

30. $4x^2 - 49$

Factor by grouping.

31. $x^3 + 9x^2 - 4x + 36$

32. $x^3 - 6x^2 + 2x - 12$