Name _____

Date _____ Per ____

Simplify:

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

4. $(6s^2 + 3s + 7) + (2s^3 - 6s - 4)$ 　　　　　 5. $(8c^4 + 2c + 3) - (3c^2 - c + 1)$

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

9. $(7n + 8)(8n - 3)$ 　　　 10. $3n^2(8n^2 + 5n - 8)$ 　　 11. $(x + 6y)(5x + 7y)$

12. $(6x - 7)^2$ 　　 13. $(6a - 6)(-2a^2 - 4a - 8)$ 　　 14. $(2a + 5)(3a - 4)(a - 8)$

15. $(n^3 + 7n^2 + 14n + 3) \div (n + 2)$

16. $(p^3 - 10p^2 + 20p + 26) \div (p - 5)$

$(x^4 - 3x^3 + x^2 + 4x - 4) \div (x^2 - 3x + 2)$

Express in simplest form without negative or zero exponents

17. $x^8 \cdot \dfrac{1}{x^3}$

18. $\dfrac{2x^{-1}}{y^{-2}}$

19. $\dfrac{3a^2x^{-2}}{axy^{-1}}$

20. $\dfrac{p^2q^{-3}}{q^{-4}r^5}$

21. $\dfrac{(2u^2)^{-2}}{u^{-2}v^{-2}}$

22. $\left(\dfrac{a}{b^{-1}}\right)^{-1}$

23. $(a^{-1}z^2)^{-3}$

24. $\left(\dfrac{3p^{-1}}{2q^2}\right)^{-3}$

25. $4p^2(2p^2q)^{-1}$

26. $\left(\dfrac{a}{b^2}\right)^{-1}\left(\dfrac{a^2}{b}\right)^{-2}$

27. $\dfrac{x^2}{y}\left(\dfrac{2x}{y^2}\right)^{-2}$

28. $\dfrac{xy^9}{3y^{-2}} \cdot \dfrac{-7y}{21x^5}$

29. $\dfrac{y^{10}}{2x^3} \cdot \dfrac{20x^{14}}{xy^6}$

30. $\dfrac{12xy}{7x^4} \cdot \dfrac{7x^5y^2}{4y}$

Write each number in scientific notation.

31. Nine billion, two hundred forty-six million.

32. Two hundred twelve thousand

33. sixty-eight thousandths

34. Thirty-five hundredths

Preform the indicated operation. Write your answer in scientific notation and decimal form.

35. $(2 \times 10^5)(3 \times 10^{-7})$

36. $(1.5 \times 10^5)(2 \times 10^2)$

37. $(7.1 \times 10^{-2})(2.4 \times 10^{-4})$

38. $(3.5 \times 10^{-4})(1.6 \times 10^{-2})$

39. $\dfrac{8.4 \times 10^{-4}}{1.2 \times 10^{-7}}$

40. $\dfrac{2.4 \times 10^5}{4.8 \times 10^3}$