

Algebra Unit 7--Study Guide

Find the sum or difference.

1. $(3a - 3b^2 - a) + (b - 5 + 7a^2)$

2. $(5a - 4a^2) - (-7a - 6)$

Find the product.

5. $-6r^3(5r^2 - 4r - 2)$

6. $-6s^4t^2(-6s^4t^4 - 5st^4 - 4t)$

Find the product.

7. $(5r - 8)^2$

8. $(-6k + 5)(-6k^2 + 2k - 9)$

9. $(-5t - 3v)(-3t - 3v)$

10. $(6c + 9)^2$

11. $(b + 3)^2$

3. $(9p - 5q^2 - q) - (q^2 - 6p + 9p^2)$

4. $(8a - 4a^2) + (6 + 8a)$

12. $(5g - 6h)^2$

13. $(r - 9)(r + 3)$

Simplify. Assume that no denominator is equal to zero.

14. $(6g^4h^3)^3$

15. $\frac{5^{11}}{5^6}$

16. $\frac{28m^{-5}n^6}{4mn^{-2}p^{-4}}$

17. $\frac{(2a^7b)^2}{24b^6}$

18. $\left(\frac{2a}{a^2}\right)^{-2}$

19. $\frac{44m^{-3}n^6}{4mn^{-2}p^{-3}}$

20. $(a^5b^5)(a^3b^3)$

21. $(-2hi^3j^3)(2h^2ij^2)$

Determine the best method to solve the system of equations. Then solve the system.

22. $x = -y$
 $5x + 6y = -3$

23. $-5x + 3y = -18$
 $2x + 2y = 4$

Find the degree of the polynomial.

24. $18a^5b^2$

25. $10a^3b^3 + 13a^8b^2 - 6a^7b^5$

26. The sum of Jack and his father's ages is 52. Jack's father's age is 2 less than 5 times Jack's age. Find the ages of Jack and his father.

Find the product of each sum and difference.

27. $(3l + 5)(3l - 5)$

28. $(3c + 5)(3c - 5)$

Arrange the terms of the polynomial so that the powers of x are in descending order.

29. $5xy^3 + x^2y^5 - 2x^3 + y^3$

30. The admission fee of a theater is \$2.50 for adults and \$1.25 for children. On a certain day, 700 people went to the theater for a concert and \$1375 was collected. How many children and how many adults attended the concert?