

Algebra Chapter 6/7 Review

Expand each expression and combine like terms if possible.

1. $(x + 9)(2x - 3) =$

2. $(2x^2 + 9y)(3x^2 - 5y) =$

Simplify each fraction completely.

3. $\frac{4n^2 + 12n^3}{2n^2} =$

4. $\frac{14x^2y^2}{7xy^3} =$

Find the sum, difference, product or quotient.

5. $\frac{6}{3x} - \frac{15x^2}{4} =$

6. $\frac{4}{x+2} \div \frac{x+6}{x+2} =$

Solve each equation for x.

7. $\frac{4}{2x-5} = \frac{x}{3}$

8. $\frac{3x+3}{-x-1} = 4$

Solve. Use each of the methods at least once: factoring, completing the square, quadratic formula.

9. $4x + 3 = 6x + x^2$

10. $4x^2 - 1 = 0$

11. $x^2 - 5x + 5 = 0$

12. $5x^2 - 6x - 2 = 0$

Use the discriminant to determine the number of solutions.

13. $3x^2 + 4x + 5 = 0$

14. $8x^2 + 2x - 3 = 0$

15. A ball is thrown upward with a starting velocity of 80 feet per second from 6 feet above the ground. The equation describing the height h of the ball after t seconds is $h = 80t - 16t^2 + 6$.

- Will the ball travel as high as 80 feet? Explain using complete sentences how you know.
- Will it travel as high as 50 feet? Explain using complete sentences how you know.
- What is the ball's maximum height? Round to the nearest hundredth if necessary.