

Survey of Algebra Skills

Name _____

Pd _____ Date _____

Solve the following equations.

1. $x - 9 = -15$

2. $-7x = -63$

3. $\frac{2}{3}x = 10$

4. $4x + 2 = 14$

5. $3x - 2 - x = 8$

6. $2(y - 1) - y = -2$

7. $\frac{2}{x} + \frac{3}{2x} = \frac{1}{2}$

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

9. $x^2 + 3x - 18 = 0$

10. $2x^2 - 5x + 2 = 0$

11. $2x^2 + 7x + 2 = 0$

Solve each system of equations.

12. $y = 3x - 5$
 $2x + y = 10$

13. $2x + 3y = 7$
 $4x - 3y = 5$

Polynomials

14. Evaluate $3x^2 - x - 5$ if $x = -2$. 15. Add $(5a - 4b) + (9a + 6b)$

16. Subtract $(6x + 2y) - (3x - 4y)$

17. Subtract $(4x^2 - 2x + 5) - (2x^2 - 3x + 2)$

18. Divide $\frac{14x^7}{2x^6}$

19. Divide $\frac{6a^3 - 2a^2 + 2a}{-2a}$

20. Multiply $3x^2(4x + 2xy)$

21. Multiply $(3x + 2)(x - 2)$

Factor.

22. $3a^2 + 12ab^2$

23. $x^2 - 49$

24. $x^2 - 6x + 9$

25. $c^2 + 7c + 12$

26. $25x^2 - y^2$

27. $a^2 - 10a - 24$

Algebraic Fractions

28. Add $\frac{3}{x} + \frac{4}{x-5}$

29. Subtract $\frac{n-2}{2n} - \frac{4}{3n}$

30. Multiply $\frac{m^2-4}{18} \cdot \frac{6}{m^2+5m+6}$

31. Divide $\frac{x^2}{16} \div \frac{8x}{4}$

Radicals - Simplify.

32. $\sqrt{27}$

33. $\sqrt{150}$

34. $(5\sqrt{2})(3\sqrt{10})$

Linear Equations and Slope

35. Find the slope of the line containing (5, 3) and (2, -1).

36. Find the slope of the line containing (4, 5) and (3, 7).

37. Give the slope and y-intercept for the line $3x + 2y = 8$

Graph the line

38. $y = 2x - 1$

39. $y = -x + 4$

40. $x + y = -3$

