

Algebra II Pre-Assessment: Foundations and Building Blocks of Algebra II

Problem

1. **For each of the following equations, please solve for the indicated variable. Please show all of your work.**

1. Solve $3x - 8y = 24$ for y .

2. Solve $-6x - 12y = 30$ for x .

3. Solve $3(x + 5) + 4(2y + 3) = 45$ for x .

4. **For each of the following equations/functions please graph the equations using the method of your choice. After graphing each equation/function find the x and y intercepts and slope.**

4. $-2x - 4y = 16$

5. $-6x + 3y = 18$

6. $6x + 2y = -8$

7. **For each of the following inequalities, please graph the inequalities and shade the solution region of the inequality on the coordinate plane.**

7. $-8x + 4y > -12$

8. $-2x + 3y < -9$

9. $12 - 4y \leq 6x$

10. **For each of the following systems of equations, please solve the system of equations by the method of your choice (GRAPHING, SUBSTITUTION or ELIMINATION) and express the solution as a coordinate point (SHOW ALL OF YOUR WORK.)**

10. $8x - 4y = 24$

$-2x + y = -4$

11. $-2x + 2y = 6$

$8x - 4y = -4$

12. $8x - 4y = 16$

$8x + 2y = 4$

13. For each of the following application word problems, please create two equations from the given information and then solve the system of equations using the method of your choice. (SHOW ALL OF YOUR WORK.)

13. A school play charged adults \$16 and students \$10 for tickets. There were 75 people who attended the play. The box office collected \$888. How many adults and how many students attended the play?

14. The state fair is a popular field trip destination. This year the senior class at High School A and the senior class at High School B both planned trips there. The senior class at High School A rented and filled 8 vans and 8 buses with 240 students. High School B rented and filled 4 vans and 1 bus with 54 students. Every van had the same number of students in it as did the buses. Find the number of students in each van and in each bus.

15. Ilida went to Minewaska Sate Park one day this summer. All of the people at the park were either hiking or bike riding. There were 178 more hikers than bike riders. If there were a total of 676 people at the park, how many were hiking and how many were riding their bikes?

16. For each of the following systems of inequalities, please solve the system by graphing method and expression the solution by shading the solution region. (SHOW ALL OF YOUR WORK.)

16. $-6x + 3y < 3$

$$9x + 3y > -6$$

17. $2x + 3y \geq -6$

$$4x + 6y \leq 18$$

18. $6x + 9y \leq -18$

$$2x + 3y \geq 9$$

19. Please multiply each of the following polynomials and then get your answer into standard form.

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

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

21. $(3x^3 + 2x)^2$

22. Please factor each of the following trinomials.

22. $x^2 + 5x + 6$

23. $3x^2 + 13x + 12$

Name: _____

ID: A

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

25. $6x^3y - 36xy - 50x^2y$

26. $2x^5 + 6x^4y - 36x^3y^2$