Summer Packet for Students entering Algebra III/Trig 342 and 348

Name: _____ Due: Friday, August 28, 2026

This packet contains topics you have learned in previous courses that are most important to know for this class. Please read the directions and **show your work** for each problem. Then write your answers on the answer sheet.

I. Simplify each expression

1. $(-2xy^4)^3(8x^3)$

2. $\dfrac{5x^6y}{10xy^{-2}}$

3. $\sqrt[3]{27^2}$

4. $\sqrt{\dfrac{81}{100}}$

5. $\sqrt{\dfrac{x^3y}{8}^4}$

6. $2\sqrt{32}+3\sqrt{72}$

7. $\sqrt{18x^5}-\sqrt{8x^3}$

8. $\dfrac{1}{2-\sqrt{3}}$

9. $(16)^{\frac{3}{2}}$

10. $(3x^{\frac{2}{5}})(2x^{\frac{1}{2}})$

11. $8x-[2x^2-5(3x-8)]$

II. Find the product

12. (3x – 6) (5x + 1)

13. $(2x-3)^2$

14. $(3\sqrt{5}+2)(3\sqrt{5}-2)$

III. Factor completely

15. $x^3 - x$

16. $x(x-3)+4(x-3)$

17. $x^2 - 2x - 24$

18. $3x^2 + 14x + 8$

19. $x^3 - 4x^2 + 2x - 8$

IV. Rational expressions

20. Simplify: $\dfrac{x^3+27}{x^2+x-6}$

21. Divide: $\dfrac{4x-6}{(x-1)^2}$ / $\dfrac{2x^2-3x}{x^2+2x-3}$

22. Subtract: $\dfrac{3x}{x+2}$ - $\dfrac{4x^2-5}{2x^2+3x-2}$

V. Word Problems

23. Find three consecutive odd integers such that twice the smallest is three more than the greatest integer.

24. If Gina leaves now and drives at 66 km/hr she will reach Lancaster just in time for her appointment. On the other hand, if she has lunch first and leaves in 40 minutes, she will have to drive at 90 km/hr to make her appointment. How far away is Lancaster?

Name: _____ Answer Sheet Algebra III/Trig 342

I Simplify each expression

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____

II. Find the product

12. _____
13. _____
14. _____

III. Factor completely

15. _____

16. _____

17. _____

18. _____

19. _____

IV. Rational expressions

20. _____

21. _____

22. _____

V. Word problems

23. _____

24. _____