Summer Review Packet for students entering Geometry

Summer packet is due on the first day of school.

It is NOT recommended to complete this packet immediately following school dismissal in June nor the night before the packet is due. Student learning is most effective if packet is completed during the months of July and August. Geometry students may be tested on the material in this packet within the first few weeks of school once the teacher has discussed the packet in the classroom.

Solve for x.

1. $4x + 23 = 9x - 7$

2. $5x + 2(180 - x) = 300$

3. $2(x + 5) = 3(x - 2)$

Simplify.

4. $\sqrt{121}$

5. $\sqrt{24}$

6. $7\sqrt{300}$

7. $4\sqrt{2} + \sqrt{2}$

8. $8\sqrt{3} - 4\sqrt{3}$

9. $2\sqrt{3} \cdot \sqrt{32}$

10. $\sqrt{7}(3\sqrt{2} + \sqrt{16})$

11. $\sqrt{\dfrac{36}{225}}$

12. $\sqrt{\dfrac{3}{7}}$

13. $(3\sqrt{5})^2$

Simplify. Use positive exponents.

14. $y^3 \cdot y^5$

15. $(x^3)^8$

16. $(-6)^3$

17. $\dfrac{m^{10}}{m^4}$

18. $\dfrac{32x^3 y^4 z^9}{48x^{18} y^4 z^2}$

Solve the linear system by using the substitution method.

19. $y = 2x + 5 \qquad 3x - y = 4$

20. $x - 7y = 13 \qquad 3x - 5y = 23$

21. $6x + 2y = 38$ $\qquad$ $2x - 5y = -10$

Solve the linear system by using the elimination method.

22. $5x - y = 20$

$\quad 3x + y = 12$

23. $9x - 2y = 50$

$\quad 6x - 2y = 32$

24. $19 = 5x + 2y$

$\quad 1 = 3x - 4y$

25. $3x + 7y = 6$

$\quad 2x + 9y = 4$

Perform the given operation.

26. $(x^4 + 6x^2 + 7) + (2x^4 - 3x^2 + 1)$

27. $(7n^3 + 2n^2 - n - 4) - (4n^3 - 3n^2 + 8)$

Find the product.

28. $(x + 3)(2x + 3)$

29. $(3x - 1)(5x + 1)$

30. $(4x - 7)(5x - 2)$

31. $(5x + 2)(4x^2 + 8x - 7)$

32. $(3x^2 + x - 5)(9x - 2)$

Factor the expression.

33. $x^2 + 13x + 30$
equation by factoring.

34. $a^2 - 6a - 16$

35. $3x^2 - 8x + 4$ **Solve the**

36. $y^2 + 4y - 32 = 0$

37. $2x^2 - x - 1 = 0$

38. $4x^2 + 44x + 121 = 0$

Find the missing length of the right triangle using the Pythagorean Theorem $a^2 + b^2 = c^2$. Remember that a and b are the lengths of the legs and c is the length of the hypotenuse. In questions #42-44, find the unknown lengths of the right triangle.

39. $a = 3, b = 4$

40. $a = 5, c = 10$

41. $a = x, \ b = 1, \ c = \sqrt{2x}$

42. $a = x, b = (x + 6), c = 2\sqrt{17}$
the following fractions.

43. $a = x, b = (2x - 1), c = (2x + 1)$ **Simplify**

44. $\dfrac{5bc^2}{25b^3c}$

45. $\dfrac{x + 2}{3x + 6}$

46. $\dfrac{9x - 6y}{3}$

47. $\dfrac{a^2 + 8a + 16}{a^2 - 16}$

Solve for x in the proportion.

48. $\dfrac{5}{3x} = \dfrac{1}{15}$

49. $\dfrac{x - 2}{4} = \dfrac{x + 10}{10}$

50. $\dfrac{9 - x}{x + 4} = \dfrac{5}{2x}$