RAMAPO-INDIAN HILLS SCHOOL DISTRICT

Dear Ramapo-Indian Hills Student:

Please find attached the summer packet for your upcoming math course. The purpose of the summer packet is to provide you with an opportunity to review prerequisite skills and concepts in preparation for your next year's mathematics course.   While you may find some problems in this packet to be easy, you may also find others to be more difficult; therefore, you are not necessarily expected to answer every question correctly. Rather, the expectation is for students to put forth their best effort, and work diligently through each problem.

To that end, you may wish to review notes from prior courses or on-line videos (www.KhanAcademy.com, www.glencoe.com, www.youtube.com) to refresh your memory on how to complete these problems.   We recommend you circle any problems that cause you difficulty, and ask your teachers to review the respective questions when you return to school in September.   Again, given that math builds on prior concepts, the purpose of this packet is to help prepare you for your upcoming math course by reviewing these prerequisite skills; therefore, the greater effort you put forth on this packet, the greater it will benefit you when you return to school.

Please bring your packet and completed work done on the packet to the first day of class in September. Teachers will plan to review concepts from the summer packets in class and will also be available to answer questions during their extra help hours after school. Teachers may assess on the material in these summer packets after reviewing with the class.

If there are any questions, please do not hesitate to contact the Math Supervisors at the numbers noted below.

Enjoy your summer!

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NAME: _____ PERIOD: _____

The following problems reflect prerequisite material that you are required to know for this course. Please complete the following problems by the date assigned by your teacher. You will be assessed on this material within the first few weeks of school.

1. What is the x intercept of the line 3x - 4y = 20

2. Write the equation of a line with slope -5 and that passes through (1, 0)

3. What is the slope of the line 4x + 5y = 10

4. Find the x-intercept and y-intercept of the line with equation $725=-y+x$

5. Solve $2(-x-2)+(5x-1)=3(x-7)+18$.

6. Solve: $x(x-10)+x(x+2)+3=2x(x+1)-7$

7. Solve: $7(x+8)<3(x+2)+4x$

8. Simplify: $\left(2x^2-5x+7\right)-\left(3x^3+x^2+2\right)$

9. Solve: $4(x-1)<7x+8$

10. Solve and graph on a number line: $|3x+8|<23$

11. Simplify: $2xy\left(x^2y+2xy^2+3xy\right)$

12. Solve the following quadratic: $2x^2+7x+3=0$

13. Simplify: $\left(2x+3\right)\left(4x^2+3x+1\right)$

14. Simplify: $(x-1)(x^2+x+1)$

15. Evaluate f(3) – f(5) for $f(x) = 2x^3 - 5x$

16. Solve: $|5x-3|-3=9$

17. Solve: $\begin{cases} y = x+1 \\ x = y-1 \end{cases}$

18. Solve: $\begin{cases} 2x+y=5 \\ 3x-2y=4 \end{cases}$

19. Solve: $\begin{cases} 3x+y=1 \\ x=2y+5 \end{cases}$

20. Solve: $\sqrt{2x^2-144} = x$

21. Factor: $2x^2-5x-3$

22. Factor: x^3+2x^2-3x

23. Factor: $6x^2+13x+2$

24. Factor: $x^2+2x-xy-2y$

25. Simplify: $\left(\dfrac{2x^3y^2}{-x^2y^5}\right)^{-2}$

26. Solve: $\sqrt{2x^2+8x} = x$

27. Simplify: $\dfrac{\left(4x^{-2}y\right)^2}{\left(2x^2y^{-1}\right)^3}$

28. Simplify: $\sqrt{50x^3y^2}$

29. Simplify: $\left(\dfrac{5b^2n^{-4}}{n^{-2}z^3}\right)^{-1}$

30. Simplify: $\left(\sqrt{3}+6\right)^2$

31. Simplify: $3\left(4+\sqrt{12}\right)^2$

32. Simplify: $\sqrt{50m^3n^5}$

33. Simplify: $8\sqrt{32}+4\sqrt{50}$

34. Simplify: $\dfrac{\sqrt{2}}{2+\sqrt{3}}$

35. Simplify: $7\sqrt{98}+5\sqrt{32}-2\sqrt{75}$

36. Simplify: $\left(5+\sqrt{5}\right)^2$

37. Simplify: $\dfrac{x^2-14x+49}{x^2-2x-35}$

38. Simplify: $\dfrac{2m-1}{m^2-3m-10}\div\dfrac{4m^2-1}{4m+8}$

39. Simplify: $\dfrac{3x-3}{3x+6}$

40. Simplify: $\dfrac{2x+3y}{5}\cdot\dfrac{10}{4x+6y}$

41. Simplify: $\dfrac{y+3}{y^2-9}\div\dfrac{y-3}{y^2-5y+6}$

42. Solve: $\dfrac{15}{x}-\dfrac{15}{x+2}=2$

43. Solve: $\dfrac{x-1}{2x+5}=\dfrac{1}{4}$

44. Solve: $\dfrac{x}{x^2 + 3x - 4} + \dfrac{x+1}{x^2 + 6x + 8} = \dfrac{2x}{x^2 + x - 2}$

45. Simplify: $\dfrac{m^2 + 10m - 11}{m^2 - 1} \cdot \dfrac{m+1}{m+11}$

46. Simplify: $\dfrac{x^2 + x}{x^2} \cdot \dfrac{3x - 3}{x^2 - 1}$

47. Simplify: $\dfrac{x-4}{x-3} + \dfrac{x-1}{3-x}$

48. Simplify: $\dfrac{3}{2a + 18} + \dfrac{27}{a^2 - 81}$

49. Simplify: $\dfrac{3}{\sqrt{5}}$

50. Write the equation of a line given the 2 points (3,6) and (7, 9).

51. A surveyor is 300 ft from the base of an apartment building. The angle of elevation to the top of the building is 24 degrees, and her angle-measuring device is 5 ft above the ground. Find the height of the building to the nearest tenth?
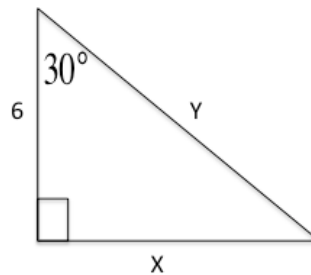
52. A golfer is standing on a tee with the green in a valley below. If the tee is 43 yards higher than the green and the angle of depression from the tee to the green is 14 degrees, then find the horizontal distance from the green to the tee to the nearest tenth.

Given the following triangles: Find the exact values of the missing measures.
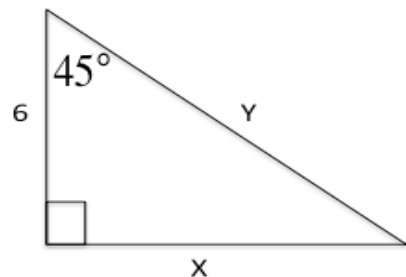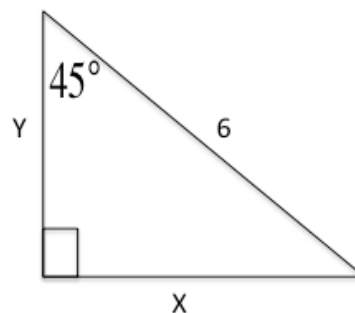
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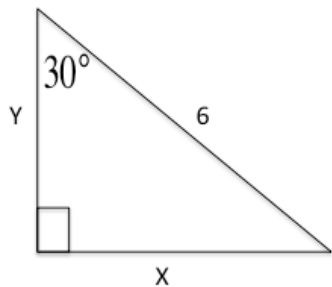
54.

55.

56.

57. Given a central angle of a circle measuring 45 degrees. Find the length of the arc if the radius of the circle is 8 cm.

Find the following exact values given the triangle at the right.

58. sin A: _____

59. cos A: _____

60. tan A: _____