

Math Summer Packet 2017

General instructions for all math Summer Packets:

- ▶ Unless the directions tell you otherwise, do all work on a separate sheet of paper in numerical order
- ▶ Use a pencil and show all work
- ▶ Due date: **Be prepared to hand in the Summer Packet on Tuesday, August 29th.**
It will be counted as the first homework assignment of the year: Full credit if handed in and done well, no credit if not handed in, and at the teacher's discretion, half credit if incomplete or done badly.
- ▶ During the first week, summer packets will be returned with an answer sheet, and time permitted for questions
- ▶ **Assessment: Thursday or Friday, At the teacher's discretion**
- ▶ Not only are you expected to do this packet, you are expected to do it **well**. Use textbooks, online tutoring, etc. to help. Excuses such as "I forgot" or "I never had this" will not be accepted. If you want to be an Honors student, act like an Honors student.

Questions can be directed to Mr. Poulin: npoulin@theproutschool.org

ALGEBRA 2 HONORS SUMMER 2017 PACKET Name _____

Directions: Show all work on these pages.

<p>1. Evaluate without a calculator:</p> $7 - 3 \cdot 2^2 + 4(5 - 2) \quad \underline{\hspace{2cm}}$	<p>2. Evaluate:</p> <p>A) $-2^4 = \underline{\hspace{2cm}}$ B) $(-2)^4 = \underline{\hspace{2cm}}$</p>
<p>3. Simplify:</p> <p>A) $3(x - 2) - (4 + x) \quad \underline{\hspace{2cm}}$</p> <p>B) $4(x^2 + 2x) - 2x(x - 1) \quad \underline{\hspace{2cm}}$</p>	<p>4. Evaluate the expression for the given value of the variable.</p> <p>A) $x^2 - 5x - 8$ when $x = -3$ $\hspace{15em} \underline{\hspace{2cm}}$</p> <p>B) $x^3 + 4$ when $x = -4$ $\hspace{15em} \underline{\hspace{2cm}}$</p>
<p>5. Solve the system using elimination: $\begin{cases} -8x - 10y = 24 \\ 6x + 5y = 2 \end{cases}$ $x = \underline{\hspace{2cm}}$ $y = \underline{\hspace{2cm}}$</p>	

6. Solve the equations for x:

A) $-(x + 2) - 2x = -2(x + 1)$

x = _____

B) $\frac{7}{2}x - 1 = 2x + 5$

x = _____

C) $-\frac{2}{3}\left(\frac{6}{5}x - \frac{7}{10}\right) = \frac{17}{20}$

x = _____

Word Problems. Show all work and solve for the unknown.

7. The bill for the repair of your car was \$390. The cost for parts was \$215. The cost for labor as \$35 per hour. How many hours did the repair work take?

_____ hrs.

8. A stockbroker earns a base salary of \$40,000 plus 5% of the total value of the stocks, mutual funds, and other investments that the stockbroker sells. Last year a stockbroker earned \$71750. What was the total value of the investments the stockbroker sold?

9. You have two summer jobs. In the first job, you work 28 hrs per week and earn \$7.25 per hour. In the second job you earn \$6.50 per hour and can work as many hours as you want. If you want to earn \$255 per week, how many hours must you work at your second job?

_____ hrs.

10. Re-writing Formulas. Solve the formula for the indicated variable:

A) b_2 ; $A = \frac{1}{2}h(b_1 + b_2)$

B) h ; $V = \frac{1}{3}\pi r^2 h$

C) x ; $2x + xy = 7$

Word Problems. Write an algebraic model representing the problem. Then solve. Show all work.

11. You have 480 ft of fencing to enclose a rectangular garden. You want the length of the garden to be 30 feet greater than the width. Find the length and width of the garden if you use all of the fencing.

Model: _____

Width: _____ Length: _____

12. You are taking flying lessons to get a private pilot's license. The cost of the intro lesson is $\frac{5}{8}$ the cost of each additional lesson, which is \$80. You have a total of \$375 to spend on the flying lessons. How many lessons can you afford? How much money will you have left?

Model: _____

lessons: _____ Amt left: _____

13. You are taking piano lessons. The cost of the first lesson is one and one half times the cost of each additional lesson. You spend \$260 for six lessons. How much did the first lesson cost.

Model: _____

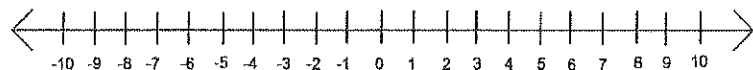
Cost of first lesson: _____

Inequalities and Absolute Values.

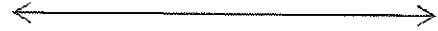
14. Solve the absolute value function for x: $|13 + 2x| = 5$

x = _____ x = _____

15. Solve and graph your solution set: $3x + 4 \geq 5x - 8$



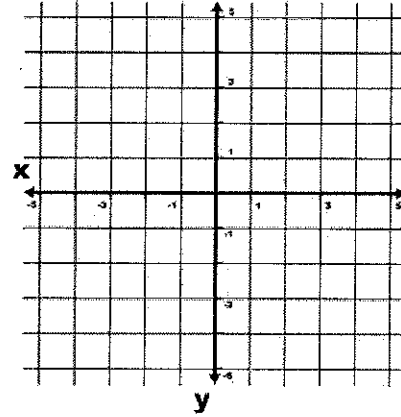
16. Solve and graph the inequality: $8x < 1$ or $x - 9 > -5$



17. Graphing Linear Equations:

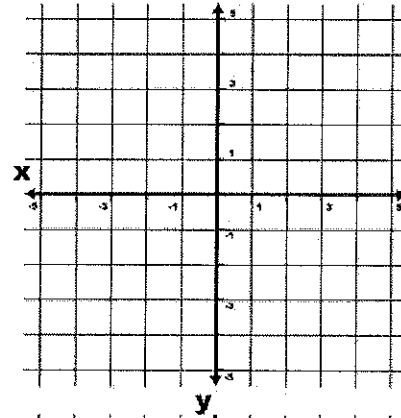
A) $2x + 3y = 6$.

- i) Graph the line from standard form.
State the x and y intercepts: _____
- ii) Solve the equation for y. _____
- iii) State the slope and y-intercept of this line.
Slope _____ y intercept _____



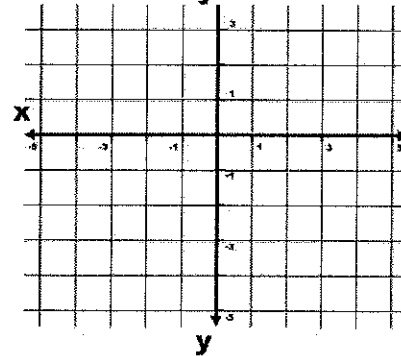
B) $x = 2$

- i) Graph
- ii) State the slope of the line



C. $y + 3 = 0$

- i) Graph the line.
- ii) State the slope of the line. _____



18. Write the equation of the line that passes through the points $(-7, 2)$ and $(-1, -4)$.