Honors Algebra 2

Summer 2018 Packet

Dear Prospective Honors Algebra 2 Students,

This packet has been put together to help you prepare and be successful in Honors Algebra 2. This is a rigorous course that will challenge your mind and encourage you to grow as a math student.

There are skills and concepts from previous courses that are essential for success in this Honors course. This packet contains problems that demonstrate these. It is important for you to make sure you fully understand these concepts and can demonstrate your understanding. Utilize text books and online resources such as Kahn Academy or math tutorials on YouTube for extra guidance.

This summer assignment is due on the first day of class. You must show all work to receive full credit. Please make sure you have mastered the material in this packet, as there will not be much time to cover it during the course of the year.

The packets will be graded and count as your first quiz of the year - so please do your very best work!

I look forward to getting to know you and to working with you this fall! If you have any questions, feel free to email me.

Sincerely,

Mrs. Donna Balcezak (aka Mrs. B)
dbalcezak@theproutschool.org

ALGEBRA 2 HONORS SUMMER 2018 PACKET

Name_____

Directions: Show all work on these pages.

1. Evaluate without a calculator:

$7 - 3 \cdot 2^2 + 4(5 - 2)$ _____

2. Evaluate:

A) -2^4 = _____ B) $(-2)^4$ = _____

3. Simplify:

A) $3(x - 2) - (4 + x)$ _____

B) $4(x^2 + 2x) - 2x(x - 1)$ _____

4. Evaluate the expression for the given value of the variable.

A) $x^2 - 5x - 8$ $when\ x = -3$

_____

B) $x^3 + 4$ $when\ x = -4$

_____

5. Solve the system using elimination: $\begin{cases} -8x - 10y = 24 \\ 6x + 5y = 2 \end{cases}$ x = _____ y = _____

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 hours 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 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.

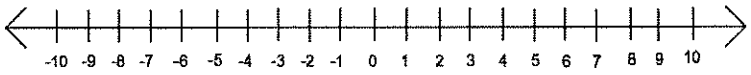
Model: _____

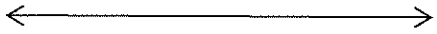
Cost of first lesson: _____

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:

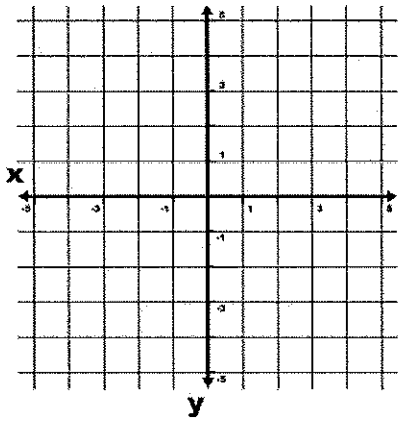
____ ____

ii) Solve the equation for y.

_____

iii) State the slope and y-intercept of this line.

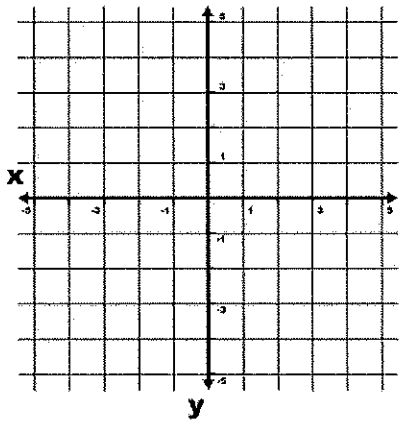
Slope _____ y intercept _____



B) x = 2

i) Graph
ii) State the slope of the line

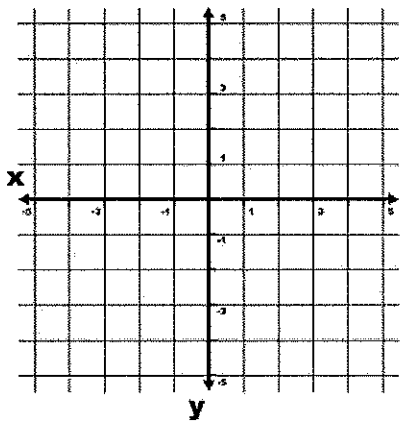
_____



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).

Ungraded section

Please tell me anything that will help me to be the best teacher for you. For example, are there any particular challenges that you have faced in the past?, do you have any special math interests?, do you have any learning accommodations?, do you want to sit near the front of the room?, or anything at all that you want me to know about you!

I look forward to meeting you in the fall!