Algebra I Summer Assignment

Dear Parent and Students,

Welcome to Ridge Point! The Algebra teachers are excited about next year. I am sure we are all looking forward to having a regular routine and things returning

We want to take this time to encourage anyone who wants to enroll in Pre-AP Algebra I to do so. The Pre-AP course at Ridge Point is very similar to the regular course. There are only a few places where the curriculum is significantly different (about 5), because we have the same end result. The recommendation is that any student earning an 85 or higher for an FIN in 8th grade should probably be in Pre-AP Algebra I in 9th grade. Think about it, all the students who were in the advanced class in 8th grade (which was Algebra I) have moved on to Geometry. That leaves all the A's and B's in middle school to take Pre-AP Algebra I in 9th grade.

Some of you might be concerned about the gaps you might have from this year. We want to assure you, all of your classmates are in the same position. We realize that there will be some gaps in learning that need to be filled as we move forward…both in regular and Pre-AP. Do not stress, we are planning for the gaps and extra support that may be needed.

There is a summer assignment which is broken up into sections below. These are all middle school concepts (or earlier) that students should remember. Understanding how to work these problems will make learning Algebra I easier.

Simplify Expressions – Use order of operations to answer these.

1. $6 + (-3)$

2. $-4 - 6$

3. $-4.51 + 11.65$

4. $\dfrac{3}{10} - \dfrac{3}{4}$

5. $-85 \div (-5)$

6. $7\left(-\dfrac{6}{14}\right)$

7. $14k - (-2k)$

8. $4xy + 9xy$

9. $6t + 2 - 4t$

10. $\dfrac{3}{4} + \dfrac{5}{8}$

11. $\dfrac{2}{3} - \dfrac{5}{6}$

12. $\dfrac{2}{3}(15)$

13. $\dfrac{5}{7} \bullet \dfrac{7}{10}$

14. $-\dfrac{2}{5} \div 18$

15. $3 - 11$

16. $-0.6 - 0.67$

17. $-7 + 7$

18. $13 - (-5)$

19. $2(-5)(-4)$

20. $(-3)(-2)(-5)$

21. $-6 \div 18 \bullet 27$

Solve equations - Make sure you are not solving on the calculator, but with inverse (the opposite) operations.

1. $x - 4 = -2$

2. $n - 7 = 22.5$

3. $\dfrac{b}{4} = 12$

4. $-\dfrac{3}{4}y = 9$

5. $4.2m = 21$

6. $\dfrac{m}{12} = 2.7$

7. $-\dfrac{12}{7}z = 48$

8. $\dfrac{5y}{4} = -15$

9. $-16 = 8 + x$

10. $15.9 = 5.3x$

11. $m + 2.35 = 4.2$

12. $\dfrac{5}{8}t = -15$

13. $2x + 3x + 3 = -12$

14. $7 = \dfrac{x + 8}{2}$

15. $5x = 2 - (x - 7)$

16. $4x + 27 + 6x = 2x - 13$

17. $v + 5 = v - 5$

18. $6(2x - 3) = 96$

19. $3p + 1 = -p + 5$

20. $\dfrac{1}{2}(6c - 4) = 4 + c$

Evaluate Expressions – Substitute the value of the variable into the expression and simplify.

1. $-w + 3w$; $w = -3$

2. $\dfrac{3 + k}{k}$; $k = 3$

3. $y = 7x - 5$; $(0, 5)$

4. $3x - 2y$; $x = -1, y = 2$

5. $-2x + 4y$; $x = -3, y = 7$

6. $-4x + 5y$; $x = 2, y = 8$

Evaluate each expression for $a = -1$, $b - 3$, and $c = -2$.

7. $2a - b^2 + c$

8. $\dfrac{b^2 - 4ac}{2a}$

9. $5a + 2b(c - 1)$

Write each ratio as a fraction – Remember the 1ˢᵗ number goes in the numerator (top) and the second number goes in the denominator (bottom). Then simplify the fraction, if possible.

10. 10 to 2

11. 35 to 25

12. 42 to 95

13. 7:–56

14. 81:108

15. –16:12

List all the factors – What numbers can you divide into each of these?

Ex: 20 – the factors are 1, 2, 4, 5, 10, 20

16. 12

17. 18

18. 121

19. 81

20. 56

21. 300

22. 250

23. 207

24. 126

For each function, find *f*(2) and *f*(3) – Just substitute the number for x in the equation and simplify.

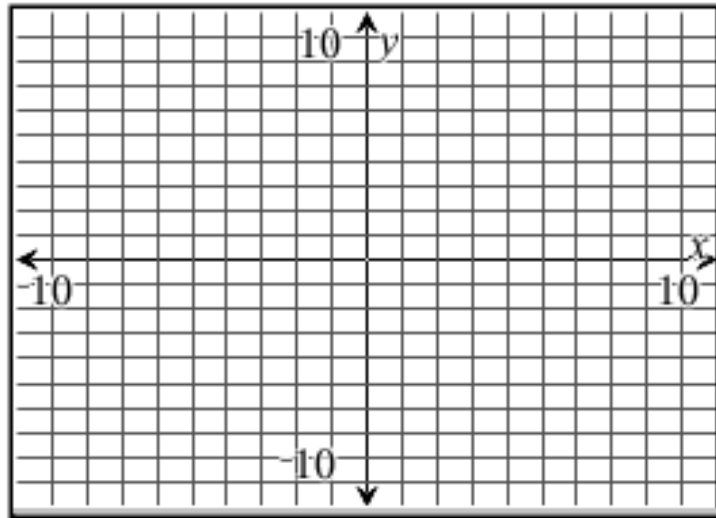25. $f(x) = 2x + 8$

26. $f(x) = 7x - 4$

27. $f(x) = -5x + 3$

28. $f(x) = -3x - 9$

29. $f(x) = 0.2x + 0.7$

30. $f(x) = 4x - \dfrac{2}{3}$

Graph and label the ordered pairs in the same coordinate plane.

1. $A. (3, -3)$
    $B. (0, -5)$
    $C. (-2, 2)$
    $D. (6, 8)$
    $E. (-7, -4)$
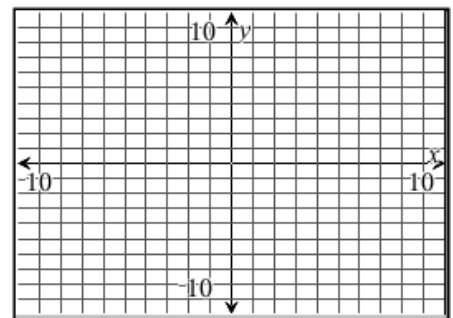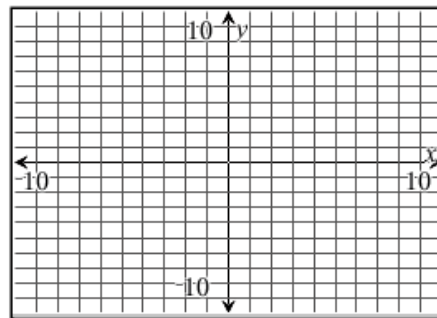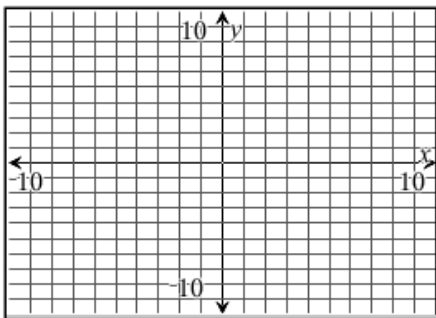 $F. (9, 0)$

Make a table for each function rule. Then graph each equation using the points you created.

2. $f(x) = 2x - 5$

3. $f(x) = -3x + 6$

4. $f(x) = \dfrac{2}{3}x + 4$

Writing and Solving Equations – These problems can be solved logically or using Algebra to write and solve an equation. Use whatever method you are comfortable with…but the ultimate question will be can you explain how you arrived at an answer.

5. Mr. Brown drives 174 miles in 3 hours. At the same rate, how far would you expect Mr. Brown to drive in 8 hours?

6. Mrs. Edwards spends $4 for 48 pencils. At this rate, how many pencils can she purchase with $10?

7. One pizza feeds 6 people. If there are 135 people, how many pizzas do you need to purchase?

8. The length of the rectangle is twice the width. If the width is 13cm, what is the area of the rectangle?

9. A birch tree grew 2.5 in. in 5 months. How much did the tree grow in 1 month?