Upstate Homeschool Co-op

GEOMETRY & ALGEBRA 2 READINESS TEST

This Readiness Test can help CP and Honors students determine if they are ready to enroll in either Geometry or Algebra 2 at UHC. Both classes require your child to have successfully completed Algebra 1. This Readiness Test is highly encouraged, but not required for UHC enrollment purposes. It is the responsibility of the parent to administer the test and score it. **Parents acknowledge that their student has the necessary prerequisites upon enrolling their student in Geometry or Algebra 2 at UHC.**

This test is not perfect, so please use common sense while making any final placement decisions. It is not necessary to time the test, but a proctor should make sure the student has a quiet space without distractions or outside resources. If necessary, the student can use their old Algebra 1 textbook as a reference. **We recommend no calculator is used for this test.**

SCORING:
The test is divided into two sections. Section 1 is the simpler part of the test.

The student is most likely ready for Geometry and Algebra 2 if (s)he makes the following scores on the two sections:
Section 1: 10 or more correct on problems 1 – 15
Section 2: 10 or more correct on problems 16 – 31

If the student's score falls below this level, additional study over the summer is strongly recommended to improve understanding of these concepts. Page 5 provides a list of the concepts tested for specific problems.

SECTION 1:

1. Evaluate $5 - 3(x - 1)$ when $x = 7$
2. Evaluate $4x^2 - 5x + 1$ when $x = \ -2$
3. Simplify: $y(y - 11)$
4. Simplify: $(x + 6)(x - 3)$
5. Simplify: $(y - 1)(y^2 + 2y + 1)$
6. Simplify: $(\sqrt{2}\sqrt{3})^2$
7. Simplify: $(7x^2)(x^4)(-5x)$
8. Simplify: $\frac{4x^4 - x^3}{8x - 2}$
9. Solve: $6x + 7 = 31$
10. Solve: $3y + \frac{1}{4}y = 26$
11. Solve: $12(x - 1) = 8(x + 1)$
12. Solve: $\frac{1}{2y} - \frac{2}{3y} = -\frac{3}{4}$
13. Solve: $5[1 - 2(x + 2)] = 4x$
14. Beth and Jenn at 625 miles apart and traveling straight toward each other. If Beth's speed is 55 mph and Jenn's speed is 70 mph, how many hours will it be before the two meet?
15. Suzanne is collecting donations for Miracle Hill. She has 5 fewer quarters than nickels in her collection bucket. If Suzanne has $5.95 in quarters and nickels, how many nickels does she have?

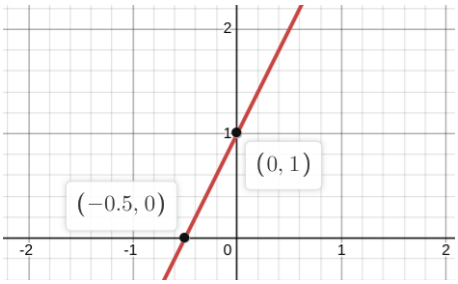
SECTION 2:

16. Solve and give all solutions: $7x + 6 \leq 34$
17. Solve and give all solutions: $2x^2 - 8 = 10$
18. Solve and give all solutions: $3x^2 + 15x = 0$
19. If $y = 4x - 7$, then find y when $x = \ -2$
20. Graph the equation $y = 2x + 1$ on a coordinate plane
21. Graph the equation $y + 3x = 4$ on a coordinate plane
22. Find the x and y-intercepts of the graph of the equation $y = 5x - 10$
23. Find the slope of the graph of the equation $y = 5x - 10$
24. Simplify: $13x^2y - 9x^2y$
25. Simplify: $xy(x^2 + y^2)$
26. Simplify: $\frac{q}{ps^2} - \frac{r}{ps^3}$
27. Simplify: $\frac{x+y}{x^2+2xy+y^2}$
28. Solve for x: $2x^2 - 9x + 10 = 0$
29. In the equation $y = ax^2 + bx + c$, find the value of y when $x = 2$, $a = 1$, $b = 3$ and $c = 5$.
30. Solve the equation $3n - n = b - 1$ for n in terms of b
31. Solve the system of equations for x and y

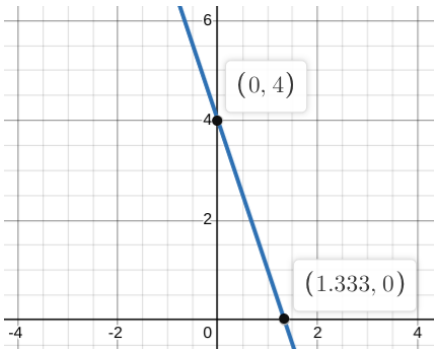
$$\begin{cases} 4x - 2y = 10 \\ x + 2y = 15 \end{cases}$$

ANSWER KEY:

1. -13
2. 27
3. $y^2 - 11y$
4. $x^2 + 3x - 18$
5. $y^3 + y^2 - y - 1$ (FOIL)
6. 6
7. $-35x^7$
8. $\frac{x^3}{2}$
9. x=4
10. y=8
11. x=5
12. $y = \frac{2}{9}$
13. $x = \frac{-15}{14}$
14. 5 hours
15. 24 nickels
16. $x \leq 4$
17. 3, -3
18. 0, -5
19. $y = \ -15$
20.



21.



22. x-intercept: (2,0)
    y-intercept: (0, -10)
23. Slope = 5
24. $4x^2y$
25. $x^3y + xy^3$
26. $\frac{q-r}{ps^3}$
27. $\frac{1}{x+y}$
28. x=2 and x=$\frac{5}{2}$
29. y=15
30. $n = \frac{b-1}{2}$
31. x=5, y=5

CONCEPTS TESTED IN EACH TEST PROBLEM:

Section 1:

1. Solving Equations
2. Solving Equations
3. Using the Distributive Property
4. Multiplication of Monomials and Binomials
5. Multiplying Polynomials
6. Radical Expressions
7. Rules of Exponents
8. Greatest Common Factor & Simplifying Rational Expressions
9. Solving Linear Equations
10. Solving Rational Equations & Clearing an Equation of Fractions
11. Solving Linear Equations
12. Solving Rational Equations & Clearing an Equation of Fractions
13. Order of Operations & Solving Linear Equations
14. Distance Word Problems (d=rt)
15. Word Problems: Linear Equations

Section 2:

16. Solving Inequalities
17. Factoring Polynomials & Solving Equations by Factoring
18. Factoring Polynomials & Solving Equations by Factoring
19. Solving Linear Equations
20. Linear Equations and Their Graphs & y=mx+b
21. Linear Equations and Their Graphs
22. X-intercept and Y-intercept of a Linear Equation
23. Slope of a Line
24. Factor Polynomials
25. Distributive Property of Multiplication Over Addition & Rules of Exponents
26. Addition and Subtraction of Rational Expressions: Unlike Denominators
27. Dividing Rational Expressions
28. Factoring Polynomials when the Leading Coefficient Does Not Equal 1 & Solving Quadratic Equations

29. Functions
30. Solving Functions
31. System of Equations

If your student scores below the recommended level on the readiness test, we recommend you consider using one or more of the following resources to review and prepare for class in the fall:

- Study with an online resource such as Khan Academy
- Study with a previously used math textbook (or purchase a used one)
- Hire a private tutor
- Add a virtual math lab to your UHC enrollment course list

If your student does well on this assessment, it is recommended that this assessment be used as a review closer to the start of school. This will provide a refresher of the concepts that may have been forgotten over the summer.

**Please note that the Readiness Test is NOT the same thing as the Summer Assignment.*