



HSML Summer Geometry Course Preparedness Test

High School Math Live wants parents to be well informed. We want your student to be placed in the appropriate course so that they will be successful and challenged while learning the beauty of mathematics. The questions we have below will be a good indicator to whether your student is ready for Geometry.

Please have your student complete the test and then scan their work and answers, making sure that the answers are in the same order as the problems on the document. The scan should be emailed as a single PDF document to Mrs. Kirby at kim.kirby@highschoolmathlive.com.

Mrs. Kirby will contact you with results of the test. If the results do not demonstrate a strong readiness for Geometry, it does not mean you won't be *allowed* to take the course, but we want you to know if the class is going to be a significant stretch for your student. Prior to classes starting, if you have registered and decide not to take the course based on the results of this test, you will receive a full refund of the \$125 first payment.

Please view our website, www.highschoolmathlive.com, to read other details including what makes a successful HSML summer student and online learner.

For these questions, no calculator should be used.

Part 1. Simplify the following.

1. 2^4
2. $\sqrt{75}$
3. $31 - 78$
4. $7 + 3 \cdot 4$
5. $4(2 + 7) \div 2$
6. $|-3|$
7. $\frac{42}{7}$
8. $-\frac{1}{2} + \frac{3}{8}$

Part 2. Algebraic Expressions

1. Translate this statement: 5 less than the product of x and y.
2. Simplify: $-3(x - 4)$
3. Simplify: $(5x^2 - x + 2) - (x^2 - 4x + 7)$

Part 3: Solve for x.

1. $\frac{2}{x} = \frac{7}{6}$
2. $x - 4 = -10$
3. $-2x + 3 = 11$
4. $5(x - 12) = 8(3x + 2)$

5. $5(x+3) = 15 + 2(2x-1)$

6. $5x + 2 = 3x + 6$

7. $x^2 + 3x - 54 = 0$

8. $7x^2 - 30x = -8$

Part 4. Fractions/Decimals

1. Is $\frac{15}{20}$ equivalent to $\frac{3}{4}$?
2. What is the improper fraction for $3\frac{3}{8}$?
3. What is the decimal that is equivalent to $5\frac{2}{5}$?
4. What is the least common denominator for $\frac{3}{4}$ and $\frac{2}{3}$?

Part 5. Evaluate the following expressions with the given values.

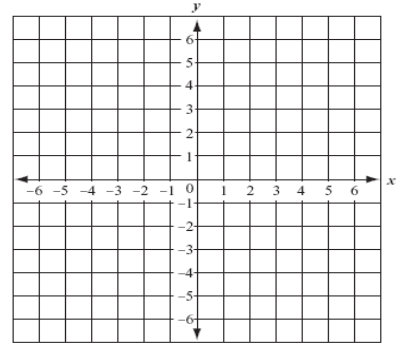
1. $4x - 2y$ if $x = 5$ and $y = 3$

2. $\frac{x(2y + z^2) - 2z}{x + 2y}$ if $x = 5$, $y = 2$ and $z = -1$

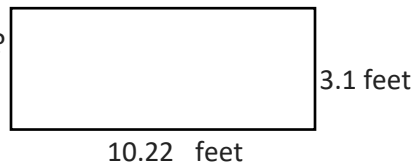
Part 6. Miscellaneous Problems

1. The area of a trapezoid is $A = \frac{1}{2}h(b_1 + b_2)$. Find the area of a trapezoid if the height is 4 inches and the bases are 1.2 inches and 6.3 inches.
2. The area of a circle is $A = \pi r^2$. Find the area of a circle if the radius length is 3 inches. You may leave π in your answer.

3. Plot the following points on the provided grid.
A (-2, -1) B (4, -5) C (-6, 3) D (3, 2)



4. What is the perimeter of this rectangle?



5. The figure is a square with side length $3\frac{1}{2}$ inches. What is the area of this square?



6. Write a paragraph explaining how to make a sandwich.