HEED Algebra 1 Placement Test

Student name:_____ Date of Birth _____

Phone number: _____

Student email: _____ Parent email: _____

Last math class completed and where: _____

Student is entering grade _____

Dear Parents (please read this entire page and follow the directions carefully):

The purpose of this test is to determine your student's readiness for a math class at HEED. Your student should do as much as they can on the test without your direct assistance. If your student is struggling with a problem, he can skip it and go back to it later. It is acceptable for him to review the concept and then return to the question, provided that he answers the question on his own. **Parents are required to proctor the test. (The student must be in the same room with the parent while the test is completed.)** You must sign below indicating you proctored the test.

Please impress upon your student the importance of carefully reading each question. Also please remind your student that this test should be an example of his best work. It should be as neat and complete as possible.

Please be sure to follow these directions:

- Please do not assist your child at all.
- Take the exam in one sitting.
- Calculators are permitted for Algebra 1, Geometry and Algebra 2. The use of cell phones and computers is strictly forbidden during the test.
- Do all work NEATLY on a separate piece of paper. It will take several pages to complete the test. It is better to use many pages and be neat and accurate.
- SHOW all your work so we can attempt to discern if incorrect answers are due to computational errors or comprehension issues.
- If you can't complete a problem do as many steps as you can and show your work
- Number each problem and circle each answer.
- Once completed, scan this cover sheet and your work, and email a copy of the scanned pdf document to:

[redacted] thaliasteffen@takeheed.org

She will review the placement test as quickly as possible and then email you the results. She will do her best to let you know if your student is already prepared for the HEED class in the fall or if there is some preparation that must be done prior to taking the class.

This test was proctored by the parent whose name and signature appear below:

Parent's printed name: _____

Parent's Signature: _____

Part 1 Readiness Test for Saxon's Algebra 1

81. The first flock contained 5283 birds. The second flock contained 5 times as many birds. The third flock had twice as many birds as the second flock. How many birds were there in all?

82. The whole batch cost $28,000 and contained 140 items. Write the two rates (ratios) implied by this statement. What would be the price for 200 items?

83. For 4 hours Sam traveled at 40 miles per hour. Then he increased his speed to 60 miles per hour and drove for another 3 hours. How far did he go in the 7 hours he traveled?

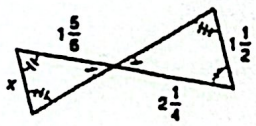
84. The ratio of roses to snapdragons was 4 to 5. If there were 26,000 roses on the float, how many snapdragons were there?

85. The number of red frogs exceeded the number of blue frogs by 80. The number of green frogs was 20 less than the number of blue frogs. If there were 120 blue fogs, what was the sum of the reds, the blues, and the greens?

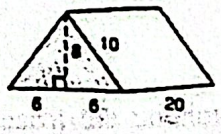
86. Six times a number is 45 greater than the product of the number and -3. Find the number.

87. If 200 is increased by 130 percent, what is the resulting number?

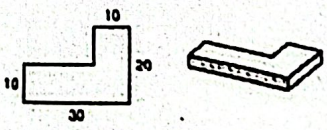
88. Find x.



89. Find the surface area of this right solid. Dimensions are in centimeters.



90. What is the volume in cubic meters of the right solid whose base is the figure shown on the left and whose sides are 200 centimeters tall? Dimensions are in meters. All angles are right angles.



91. Write 0.000387 in scientific notation.

92. $\frac{1821.5}{0.7}$

93. $9\frac{2}{14} - 3\frac{15}{21}$

94. 9876.5 − 643.99

95. $3\frac{1}{2} \times 6\frac{1}{3} \div 2\frac{1}{3} \times 1\frac{1}{3}$

96. $3^2 + 3[2^3(\sqrt{49} - 2^2)(3^2 - 2^3) - 2^2]$

97. Reduce to lowest terms: $\frac{102}{170}$

98. Convert 250.025 to a mixed number.

99. Use two unit multipliers to convert 144 square feet to square miles. Round any decimal answer to two places.

100. Evaluate: $\sqrt[m]{p} + \frac{x}{\sqrt{p}}$ if $p = 16$, $m = 4$, and $x = 3$

Part 2 Readiness Test for Saxon's *Algebra 1*

The purpose of this section is to determine readiness for Saxon's *Algebra 1* textbook. Answering 8 or more problems correctly indicates readiness for Saxon's *Algebra 1* textbook.

1. Express $\frac{1}{8} + \frac{5}{6}$ as a fraction reduced to lowest terms.

2. Find the area of a circle of radius 2. (Area $= \pi r^2$) Express your answer in terms of π.

3. Draw a number line that shows at least the integers from -3 to 3. Graph the numbers 2, 3, and $5\frac{1}{2}$.

4. Multiply. Express the product as a fraction reduced to its lowest terms.

$$\frac{3}{8} \times \frac{4}{5}$$

5. Express mathematically "five added to twice a number." Use N to represent the unknown number.

6. The ratio of boys to girls in the class was 4 to 6. If there were 8 boys in the class, how many girls were in the class?

7. The original price of the pants was \$40.00; during the Presidents' Day Sale, the price of the pants was reduced by 20%. What was the sale price of the pants?

8. Compute: $3^2 - 2^3 + \sqrt{16}$

9. Complete the table by converting the fraction to a decimal and a percent. An example is shown on the left:

fraction	decimal	percent
$\frac{1}{2}$	0.50	50%

fraction	decimal	percent
$\frac{3}{8}$		

10. Use the information in the graph below to calculate the average monthly new car sales for the five months shown on the graph.

