Middle Grades Math Placement Test

For Students New to the Saxon Math *Program*

SAXON™
HOMESCHOOL

The Objective

This test can be used to help teachers find the best initial placement for students who are new to the *Saxon Math* program. This test includes selected content from *Math 5/4*, *Math 6/5*, *Math 7/6*, *Math 8/7*, and *Algebra* $\frac{1}{2}$. Please note that this placement test is not infallible. It is simply one indicator that can be used to place students. The best placement for most students is to start the year in the textbook designed for students at that grade level (*Math 5/4* for fourth grade, *Math 6/5* for fifth grade, *Math 7/6* for sixth grade, *Math 8/7* for seventh grade, and *Algebra* $\frac{1}{2}$ for eighth grade). Students who have missed math concepts in their previous study may be better served beginning one textbook level lower. Exceptional students, at either end of the spectrum, can be well served when they are placed at levels consistent with their competencies. This test is not intended for use with current Saxon students.

The Rules

1. Allow the student to work until he/she cannot complete any more problems.
2. The student may not use a calculator during the test.
3. The student should work independently without coaching or other assistance.
4. The student should show all of his/her work. Look over the student's work carefully as you grade the test.
5. Use the placement guide provided along with sound judgment to help you place the student in the most appropriate book.

The Score

- Fifteen or fewer correct from Questions 1–20 and the student is an average-to-accelerated fourth grader: Student may begin *Math 5/4*.
- Sixteen or more correct from Questions 1–20: Student may begin *Math 6/5*.
- Sixteen or more correct from Questions 1–20 and 16 or more correct from Questions 21–40: Student may begin *Math 7/6*.
- Sixteen or more correct from Questions 21–40 and 16 or more correct from Questions 41–60: Student may begin *Math 8/7*.
- Sixteen or more correct from Questions 41–60 and 16 or more correct from Questions 61–80: Student may begin *Algebra* $\frac{1}{2}$.
- Sixteen or more correct from Questions 61–80 and 16 or more correct from Questions 81–100: Student may begin *Algebra 1* or be given an additional test for possible placement in a higher-level text.

The math placement tests are only one tool used to place a student who is new to the *Saxon Math* program. You must also consider the student's age, previous curriculum, and how quickly the student grasps math concepts. If you need more information from a qualified *Saxon Math* teacher about specific circumstances, please email us at info@saxonhomeschool.com.

Show Your Work!

Math 5/4

1. Mae-Ying bought a package of paper priced at $1.98 and 2 pens priced at $0.49 each. The tax on the entire purchase was 18¢. What was the total cost of the items?

2. Seventy-five beans were equally divided into five pots. How many beans were in each pot?

3. Robo could run 7 miles in 1 hour. At that rate, how many miles could Robo run in 3 hours?

4. At 11:45 A.M. Jason glanced at the clock. His doctor's appointment was in $2\frac{1}{2}$ hours. At what time was his appointment?

5. Find the sixth number in this counting sequence: 7, 14, 21, . . .

6. Write the number of shaded rectangles shown as a mixed number.
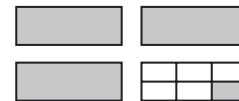
7. Twenty-five percent of this square is shaded. What percent of the square is not shaded?
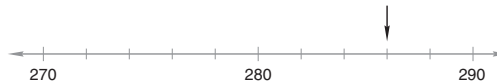
8. What is the perimeter of this rectangle?

6 in.

4 in.
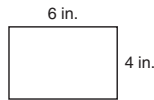
9. A square has one side that is 7 inches long. What is the area of the square?

10. To what number is the arrow pointing?

270   280   290

11. $4.2 + 3.5 + 0.25 + 4.0$

12.   460
        $\times$ 9

13. $6\overline{)3795}$

14. $6 \times 4 \times 10$

15. $4.86
        + $2.95

Find each missing number for 16–17:

16. z
        + 179
        496

17.   67
        $-$ B
        16

18. Use digits to write the number three hundred forty-three.

19. Which digit in 6.125 is in the hundredths place?

20. What is the length of $\overline{ST}$?

R   S   T

cm 1   2   3   4   5   6   7   8   9   10
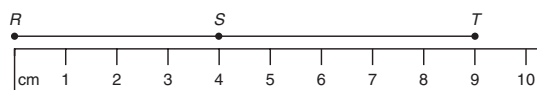
21. In 2 hours the 3 boys picked a total of 1347 cherries. If they share the cherries evenly, then each boy will get how many cherries?

22. After paying $7.50 for a movie ticket, Salvador still had $3.75. How much money did Salvador have before paying for a ticket?

23. When three new members joined the club, the number of members increased to 28. How many members were in the club before the new members arrived?

24. Adriana's age is $\frac{1}{3}$ of her dad's age. If her dad is 36 years old, how old is Adriana?

25. Estimate the sum of 672 and 830 by rounding to the nearest hundred before adding.

26. Use digits to write eight hundred eighteen thousand, eighty.

27. $2.54
 5.36
+ 0.75

28. $7 \times 8 \times 10$

29. 4287
$\times$ 5

30. $3647 \div 6$

31.   41,026
− 39,543

32. $30m = 6000$ Find m.

33. $10 − ($5.80 + 28¢)

34. $1\frac{3}{4} + 1\frac{3}{4}$
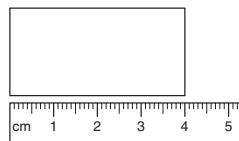
35. $\frac{7}{25} = \frac{\square}{100}$

36. Half of 100 is 50, and half of 50 is 25. What number is half of 25?

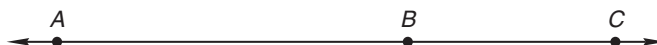**37.** A stop sign is the shape of an octagon. An octagon has how many sides?

38. What are the next three terms in this counting sequence?
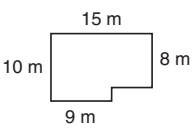. . ., 2700, 2800, 2900, ____, ____, ____, . . .

39. This rectangle is half as wide as it is long. What is the perimeter of the rectangle?

40. The length of segment *AC* is 78 millimeters. If *BC* is 29 millimeters, then what is the length of segment *AB*?

41. Which digit is in the hundred-thousands place in the number 987,654,321?

42. Write the number twenty-one and five hundredths.

43. In an auditorium there are 25 rows with 18 chairs in each row. How many chairs are in the auditorium?

44. The average pumpkin weighs 6 pounds. The prize-winning pumpkin weighs 324 pounds. The prize-winning pumpkin weighs as much as how many average pumpkins?

45. What is the total price of a $45.79 item when 7% sales tax is added?

46. How many quarter-pound hamburgers can be made from 100 pounds of ground beef?

47. There were 13 original states. There are now 50 states. What fraction of the states are the original states?

48. $\frac{8}{3} \cdot \frac{3}{1}$

49. 3.7×0.25

50. $5\overline{)0.8}$

51. $2\frac{1}{2} + 1\frac{1}{6}$

52. $\frac{3}{4} \div 1\frac{1}{2}$

53. $2^3 + \sqrt{25} \times 3 - 4^2 \div \sqrt{4}$

54. What is the average of 4.2, 2.61, and 3.6?

55. The area of a square is 64 cm^2. What is the perimeter of the square?

56. What is the area of this polygon?

15 m
10 m
8 m
9 m

57. $26.9 + 12 + w = 49.25$ Find w.

58. If $d = rt$, and if $r = 60$ and $t = 4$, what does d equal?

Complete the table for 59–60.

|	Fraction	Decimal	Percent
59.	$\frac{5}{8}$	0.625	
60.		1.25	125%

61. Round 7.49362 to the nearest thousandth.

62. President Franklin D. Roosevelt died in office in 1945 at the age of 63. In what year was he born?

63. Eric ran 8 laps in 11 minutes 44 seconds. How many seconds did it take Eric to run 8 laps?

64. A one-quart container of oil costs 89¢. A case of 12 one-quart containers costs $8.64. How much is saved per container by buying the oil by the case?

65. Ricardo ran the 400-meter race 3 times. His fastest time was 54.3 seconds. His slowest time was 56.1 seconds. If his average time was 55.0 seconds, what was his time for the third race?

66. The perimeter of a square is one yard. What is the area of the square in square inches?

67. The perimeter of the square equals the perimeter of the regular pentagon. Each side of the pentagon is 16 cm long. How long is each side of the square?
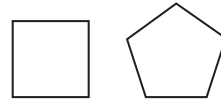
68. Find the volume of the triangular prism shown. Dimensions are in millimeters.
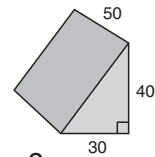
69. The sale price of an item on sale for 40% off is $48. What was the regular price?

70. A bag contains 3 red marbles, 4 white marbles, and 5 blue marbles. If one marble is drawn from the bag, what is the probability that the marble will be blue?

71. $6w = 6^3$ Find w.

72. $4\frac{4}{5} \cdot 1\frac{1}{9} \cdot 1\frac{7}{8}$

73. $3\frac{5}{6} - \left(\frac{2}{3} - \frac{1}{2}\right)$

74. $(0.15)(0.05)$

75. $\frac{1.2}{4.4} = \frac{3}{a}$ Find a.

76. If $\frac{w}{x} = 3$, what does $\frac{x}{w}$ equal?

77. Write a fraction equal to $\frac{1}{2}$ with a denominator of 6 and a fraction equal to $\frac{1}{3}$ with a denominator of 6. Then add the fractions.

78. Evaluate $x^3 - xy - \frac{x}{y}$ if $x = 2$ and $y = 0.5$

79. Forty percent of what number is 60?

80. Only three-tenths of the print area of the newspaper carried news. The rest of the area was filled with advertisements. What percent of the print area was filled with advertisements?

Algebra $\frac{1}{2}$

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.
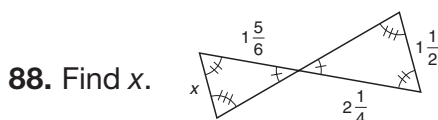
89. Find the surface area of this right solid. Dimensions are in centimeters.
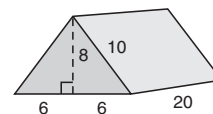
90. What is the volume in cubic meters of the right solid whose base is the figure shown on the left and whose sides are 200 centimeters tall? Dimensions are in meters. All angles are right angles.
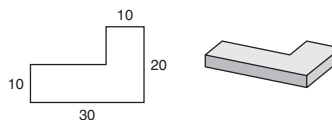
91. Write 0.000387 in scientific notation.

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

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: $\dfrac{102}{170}$

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: $\sqrt[m]{p} + \dfrac{x}{\sqrt{p}}$ if $p = 16$, $m = 4$, and $x = 3$

Placement Test Guide

Name _____   Date Tested _____

Directions: For each correct answer, place a check mark in the corresponding box. For each section, count the number of correct answers. Place the student according to the placement information for that section.

Score Card	Number of Correct Answers	Placement
1. ☐ 6. ☐ 11. ☐ 16. ☐ 2. ☐ 7. ☐ 12. ☐ 17. ☐ 3. ☐ 8. ☐ 13. ☐ 18. ☐ 4. ☐ 9. ☐ 14. ☐ 19. ☐ 5. ☐ 10. ☐ 15. ☐ 20. ☐	_____	**Fifteen or fewer correct from 1–20:** 1. Average-to-accelerated fourth grader: Begin *Math 5/4* 2. Below average fourth grader: Consider *Math 3* **Sixteen or more correct from 1–20:** Begin *Math 6/5*
21. ☐ 26. ☐ 31. ☐ 36. ☐ 22. ☐ 27. ☐ 32. ☐ 37. ☐ 23. ☐ 28. ☐ 33. ☐ 38. ☐ 24. ☐ 29. ☐ 34. ☐ 39. ☐ 25. ☐ 30. ☐ 35. ☐ 40. ☐	_____	**Sixteen or more correct from Questions 1–20 and 16 or more correct from Questions 21–40:** Begin *Math 7/6*.
41. ☐ 46. ☐ 51. ☐ 56. ☐ 42. ☐ 47. ☐ 52. ☐ 57. ☐ 43. ☐ 48. ☐ 53. ☐ 58. ☐ 44. ☐ 49. ☐ 54. ☐ 59. ☐ 45. ☐ 50. ☐ 55. ☐ 60. ☐	_____	**Sixteen or more correct from Questions 21–40 and 16 or more correct from Questions 41–60:** Begin *Math 8/7*.
61. ☐ 66. ☐ 71. ☐ 76. ☐ 62. ☐ 67. ☐ 72. ☐ 77. ☐ 63. ☐ 68. ☐ 73. ☐ 78. ☐ 64. ☐ 69. ☐ 14. ☐ 79. ☐ 65. ☐ 70. ☐ 75. ☐ 80. ☐	_____	**Sixteen or more correct from Questions 41–60 and 16 or more correct from Questions 61–80:** Begin *Algebra $\frac{1}{2}$*.
81. ☐ 86. ☐ 91. ☐ 96. ☐ 82. ☐ 87. ☐ 92. ☐ 97. ☐ 83. ☐ 88. ☐ 93. ☐ 98. ☐ 84. ☐ 89. ☐ 94. ☐ 99. ☐ 85. ☐ 90. ☐ 95. ☐ 100. ☐	_____	**Sixteen or more correct from Questions 61–80 and 16 or more correct from Questions 81–100:** Student may begin *Algebra 1* or can be given an additional test for possibility of beginning a higher-level text.

Answers for
Saxon Homeschool Middle Grades
Placement Test

1. $3.14

2. 15 beans

3. 21 miles

4. 2:15 P.M.

5. 42

6. $3\frac{1}{6}$

7. 75%

8. 20 in.

9. 49 sq. in.

10. 286

11. 11.95

12. 4140

13. 632 R3

14. 240

15. $7.81

16. 317

17. 51

18. 343

19. 2

20. 5 cm

21. 449 cherries

22. $11.25

23. 25 members

24. 12 years old

25. 1500

26. $818,080

27. $8.65

28. 560

29. 21,435

30. 607 R5

31. 1483

32. 200

33. $3.92

34. $3\frac{1}{2}$

35. 28

36. $12\frac{1}{2}$

37. 8 sides

38. 3000, 3100, 3200

39. 12 cm

40. 49 mm

41. 6

42. 21.05

43. 450 chairs

44. 54 average pumpkins

45. $49.00

46. 400 hamburgers

47. $\frac{13}{50}$

48. 8

49. 0.925

50. 0.16

51. $3\frac{2}{3}$

52. $\frac{1}{2}$

53. 15

54. 3.47

55. 32 cm

56. 138 m^2

57. 10.35

58. 240

59. 62.5%

60. $1\frac{1}{4}$

61. 7.494

62. 1882

63. 704 seconds

64. $0.17 per container

65. 54.6 seconds

66. 81 square inches

67. 20 cm

68. 30,000 mm^3

69. $80

70. $\frac{5}{12}$

71. 36

72. 10

73. $3\frac{2}{3}$

74. 0.0075

75. 11

76. $\frac{1}{3}$

77. $\frac{5}{6}$

78. 3

79. 150

80. 70%

81. 84,528 birds

82. $40,000

83. 340 mi

84. 32,500

85. 420 frogs

86. 5

87. 460

88. $\frac{11}{9}$

89. 736 cm^2

90. 800 m^3

91. 3.87×10^{-4}

92. $2602.\overline{142857}$

93. $5\frac{3}{7}$

94. 9232.51

95. $\frac{38}{3}$

96. 69

97. $\frac{3}{5}$

98. $250\frac{1}{40}$

99. 5.17×10^{-6} mi^2

100. $2\frac{3}{4}$

SAXON™
HOMESCHOOL

Houghton
Mifflin
Harcourt™

hmhco.com/homeschoolers