# SAXON
## HOMESCHOOL
™

# Placement Test
# for
# *Algebra 2*

# Saxon Homeschool
## Placement Guide

Saxon books are skill level books, not grade level books. It is essential that each student is placed in the text that meets the skill level of the individual student. Success in a Saxon book guarantees success in the next Saxon book. The following placement guide can be used to estimate in which book a student belongs, but a placement test is the more accurate measure.

| Grade | Accelerated | Average | Slower | Below Grade Level |
|---|---|---|---|---|
| 12 | *Calculus* | *Advanced Math* or *Calculus* | *Advanced Math* | *Algebra 2* |
| 11 | *Calculus* | *Advanced Math* | *Algebra 2* | *Algebra 1* |
| 10 | *Advanced Math* or *Calculus* | *Algebra 2* | *Algebra 1* | *Algebra $\frac{1}{2}$* |
| 9 | *Algebra 2* or *Advanced Math* | *Algebra 1* | *Algebra $\frac{1}{2}$* | *Math 87* |
| 8 | *Algebra 1* or *Algebra 2* | *Algebra $\frac{1}{2}$* | *Math 87* | *Math 76* |
| 7 | *Algebra $\frac{1}{2}$* or *Algebra 1* | *Math 87* | *Math 76* | *Math 65* |
| 6 | *Math 87* or *Algebra $\frac{1}{2}$* | *Math 76* | *Math 65* | *Math 54* |
| 5 | *Math 76* | *Math 65* | *Math 54* | — |
| 4 | *Math 65* | *Math 54* | — | — |
| 3 | *Math 54* | — | — | — |

*The most accurate placement is a score of greater than 85% on the enclosed placement test.*

Solve the following quadratic equations by completing the square:

**1.** $x^2 - 16 = 6x$      **2.** $x^2 + 1 = 3x$      **3.** $x^2 = 9 - 7x$

Use the quadratic formula to solve the following quadratic equations:

**4.** $3x = 4 - x^2$      **5.** $2x^2 - 6 = 3x$

**6.** A single six-sided die is rolled three times. What is the probability that a 6 will appear all three times?

Factor the following trinomials:

**7.** $3x^2 + x - 14$      **8.** $15 + 2x^2 - 11x$

Factor by grouping:

**9.** $xy - 2a - 2x + ay$      **10.** $2amn - 6n - 3m + am^2$

**11.** The number of green beads varied inversely as the square of the number of yellow beads. When there were 8 greens, there were 5 yellows. How many greens would there be if there were 10 yellows?

**12.** Simplify: $\dfrac{3\sqrt{3} + \sqrt{3}}{\sqrt{3}}$

**13.** Find the equation of the line through $(3, -6)$ that is parallel to $y = \dfrac{2}{3}x + 3$.

**14.** A cylinder whose radius is 2 inches is removed from the right prism as shown. The ends of the prism have the shape of an equilateral triangle whose sides are 8 inches long. Find the volume of the remaining solid in cubic inches. Dimensions are in inches.
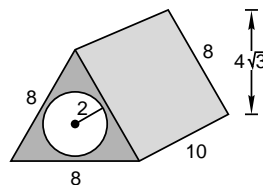
**15.** Solve: $\sqrt{3m - 5} - 4 = -3$

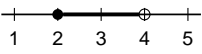**16.** Graph on a number line: $5 \le x + 3 < 7$; $D = \{\text{Reals}\}$

**17.** Melinda walked to the mall at 4 miles per hour and then rode back home in a bus at 24 miles per hour. If her total traveling time was 14 hours, how far was it to the mall?

**18.** Scott and Heather cut a 160-foot cord into two lengths. The ratio of the lengths was 7 to 1. How long was each length?

**19.** Simplify: $(5 + 2\sqrt{3})(\sqrt{3} - 3)$      **20.** Solve: $\dfrac{5x}{2} - \dfrac{x - 2}{3} = 7$

     *Algebra 1*   by Saxon

**TEST 34, FORM A**

1. $8, -2$

2. $\frac{3}{2} \pm \frac{\sqrt{5}}{2} x$

3. $-\frac{7}{2} \pm \frac{\sqrt{85}}{2}$

4. $1, -4$

5. $\frac{3}{4} \pm \frac{\sqrt{57}}{4}$

6. $\frac{1}{216}$

7. $(3x + 7)(x - 2)$

8. $(2x - 5)(x - 3)$

9. $(x + a)(y - 2)$

10. $(am - 3)(2n + m)$

11. $2$

12. $4$

13. $y = \frac{2}{3} x - 8$

14. $151.53 \text{ in.}^3$

15. $2$

16. 

17. 48 miles

18. 140 ft, 20 ft

19. $-9 - \sqrt{3}$

20. $\frac{38}{13}$