

Part III: Readiness Test for Saxon's *Advanced Mathematics*

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

1. Use the quadratic formula to solve this equation: $3x^2 - 2x + 1 = 0$.
2. (a) Graph the equation $y = x^2 - 2x + 1$. (b) Find the coordinates of the points of intersection between $y = x^2 - 2x + 1$ and $y = 4$. (c) Shade the region determined by $y > x^2 - 2x + 1$ and $y < 4$.
3. Find all pairs (x, y) that satisfy both of the following equations simultaneously:

$$\begin{aligned}2x + 3y &= 5 \\x - 2y &= 8\end{aligned}$$

4. Simplify:

$$\sqrt{\frac{3}{2}} + 4\sqrt{\frac{2}{3}} + \sqrt{24}$$

5. Solve for x :

$$x^{2/3} = 4$$

6. Solve for x :

$$\frac{5}{6} + \frac{3}{x+2} = \frac{2}{3}$$

7. Simplify:

$$\frac{x^3 - 16x - 6x^2}{x^2 - 8x - 20} \times \frac{-50 - 5x + x^2}{x^3 - 5x^2 - 24x}$$

8. Find three consecutive integers such that the product of the first and the second is equal to the product of -6 and the third.

9. How many different ways can all four of the letters A, B, C, and D be ordered if no repetition is allowed?

10. Find the equation of the line that passes through $(2, 1)$ and is perpendicular to $2x - 3y = 6$.