Desmos SAT math shortcut sheet

Use this sheet when you practice in Bluebook or on the Desmos website. Each shortcut says what to type and when it's faster than solving by hand.

Graph a system of equations

1. Type each equation on its own line, for example y = 2x - 1 and y = x^2 + x - 7.
2. Click each point where the graphs cross. Desmos shows the coordinates.
3. Check whether the question asks for a point, one coordinate or the number of solutions.

Best for: a line and a parabola, square root systems, absolute value systems.

Solve an equation in one variable

1. Graph the left side as y = ... and the right side as y = ...
2. Click the crossings. Their x-coordinates are the solutions.
3. Or move everything to one side and click the x-intercepts.

Best for: disguised quadratics such as x(x + 2) = 35 or x - 13x² + 36 = 0.

Match an exact answer

1. Desmos shows decimals, not radicals.
2. Type each answer choice on a new line, for example 1 + sqrt(10).
3. Pick the choice whose decimal matches your graph.

Fit a model with regression

1. Add a table. The columns start as x and y.
2. Type the regression:

Model	Type this
Linear	y1 ~ mx1 + b
Quadratic	y1 ~ ax1^2 + bx1 + c
Exponential	y1 ~ ab^x1

3. Use the fitted constants on a new line, for example m(7) + b or ab^8.
4. If the question already gives a line or curve of best fit, use that model instead.

Use a slider

1. Type an equation with a constant, for example y = 2x^2 - kx + 18.
2. Click to add a slider for k.
3. Set k to each answer choice and watch the graph.

Good for checking. For an exact value of k, the discriminant $b^2 - 4ac$ is usually faster.

When to solve by hand instead

- Short linear equations you can solve in two lines.
- Finding the constant that gives exactly one or no real solutions (use the discriminant).
- Word problems, where you still need to write the equation first.

Module 1 reminders

- Questions run from easiest to hardest within each module.
- There's no penalty for a wrong answer. Never leave a blank.
- If a question takes more than about 2 minutes, enter your best answer, mark it for review and move on.