

Solving Exponential Equations with Technology

To solve the equation $2^x=12$, we could use the graph of $y=2^x$. We would have to find the value of x that makes $y=12$ on the graph. Look at your graph of $y=2^x$. We can see that x is somewhere between 3 and 4.

Technology can be used to find an accurate answer to this equation. In this exercise we will use the Desmos app on the iPads.

1. Press the + button in the top left corner of the screen and select $f(x)$ expression.
2. Enter $y = 2^x$. This should display as $y = 2^x$
3. Cursor down one square, press the + button in the top left corner again and select another $f(x)$ expression.
4. Enter $y = 12$
5. Click on the point of intersection, which should be (3.58, 12).

Therefore the solution to the equation $2^x=12$ is $x = 3.58$.

Practice

Use Desmos to solve:

- a. $3^x = 15$
- b. $\left(\frac{1}{5}\right)^x = 20$