

# Today's Plan:

**Learning Target (standard):** I will use properties of logarithms to rewrite expressions.

**Students will:** Complete practice problems over previous concepts at the boards, put up homework problems on the board and make necessary corrections to their own work, and take a quiz.

**Teacher will:** Provide practice problems over previous concepts, check homework problems for accuracy and provide students feedback, describe and provide quiz problems.

**Assessment:** Board work, homework check and quiz

**Differentiation:** Students will work at the board, go over and correct homework at their seats, and actively engage in quiz problems.

Find domain and intercepts.

$$f(x) = \log_4 \left( \frac{2x-3}{4-x} \right) + 2$$

$$D: \left\{ x \mid \frac{3}{2} < x < 4 \right\}$$

$$I_x: \left( \frac{52}{33}, 0 \right)$$

$$0 = \log_4 \left( \frac{2x-3}{4-x} \right) + 2$$

$$-2 = \log_4 \left( \frac{2x-3}{4-x} \right)$$

$$4^{-2} = \frac{2x-3}{4-x}$$

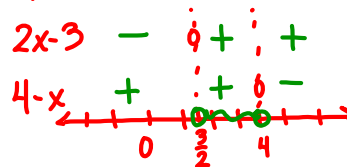
$$\frac{1}{16} = \frac{2x-3}{4-x}$$

$$32x - 48 = 4 - x$$

$$33x = 52$$

$$x = \frac{52}{33}$$

$$\frac{2x-3}{4-x} > 0$$



$$I_y: -$$

$$y = \log_4 \left( \frac{-3}{4} \right) + 2$$

$$4^y = -\frac{3}{4}$$

not possible

Write the expression as a sum/difference of logarithms:

$$\ln \left[ \frac{(2x-3)^3 \sqrt[4]{3-2x}}{\sqrt[5]{(5x-6)^2}} \right]$$

$$= \ln(2x-3)^3 + \ln \sqrt[4]{3-2x} - \ln \sqrt[5]{(5x-6)^2}$$

$$= \ln(2x-3)^3 + \ln \sqrt[4]{3-2x} - \ln(5x-6)^{\frac{2}{5}}$$

$$= 3 \ln(2x-3) + \ln(3-2x)^{\frac{1}{4}} - \frac{2}{5} \ln(5x-6)$$

$$= 3 \ln(2x-3) + \frac{1}{4} \ln(3-2x) - \frac{2}{5} \ln(5x-6)$$