# Today's Plan:

***Learning Target (standard)***: I will review functions.

***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 complete test problems on functions.

***Teacher will***: Provide practice problems over previous concepts, check homework problems for accuracy and provide students feedback, describe and provide examples of review concepts and assign students assessment problems over functions.

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

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

Are the given functions inverses of one another?

$$f(x) = -\frac{1}{4}x + \frac{5}{4} \qquad g(x) = -4x + 5$$

$x = -\frac{1}{4}y + \frac{5}{4}$

$\left[x - \frac{5}{4} = -\frac{1}{4}y\right] 4$

$4x - 5 = -y$

$y = -4x + 5$

$f^{-1}(x) = g(x)$

Yes

The electrical resistance *(r)* of a cable varies directly as its length *(L)* and inversely as the square of its diameter *(d)*. If a cable 16,000 feet long and $^1/_4$ inch in diameter has a resistance of 3.2 ohms, what is the resistance of a cable that is 8000 feet long and $^1/_2$ inch in diameter?

① $r = \frac{kL}{d^2}$

② $3.2 = \frac{k(16000)}{(\frac{1}{4})^2}$

$3.2 = \frac{16000k}{\frac{1}{16}}$

$3.2 = 256000k$

$k = 0.0000125$

③ $r = \frac{0.0000125L}{d^2}$

④ $r = \frac{0.0000125(8000)}{(\frac{1}{2})^2}$

$r = \frac{0.1}{\frac{1}{4}}$

$r = 0.4$ ohms