

Name: _____

Notesheet. Section 1.4

Math 1210

Definition 1. A linear equation is

Definition 2. The slope of a line is

Definition 3. The y -intercept of a line is

Challenge 4. Consider a straight line going through points $(-1, -2)$ and $(1, 4)$. What is the slope of this line? Can you formulate an equation for this line?

Challenge 5. A taxi company charges you \$4.50 for getting in a taxi and then \$1.75 for every mile you ride. Represent your total cost as a linear function of miles. How much will a 4 mile ride cost?

Challenge 6. The relationship between temperature in degrees Fahrenheit and degree Celsius is linear. Given that $32^{\circ}F = 0^{\circ}C$ and $212^{\circ}F = 100^{\circ}C$, write a linear function for degrees Fahrenheit given degrees Celsius.

Definition 7. A line is parallel to another line when

Definition 8. A line is perpendicular to another line when

Challenge 9. Let L be the line defined by $y = 3x + 4$. Give an equation for a line that is parallel to L and passes through $(2, 7)$. Give an equation for a line that is perpendicular to L and passes through the point $(2, 7)$. Plot these lines. Finally, if $f(x) = 3x + 4$, what is $f^{-1}(x)$?