



WIR #2: SECTIONS 2.1 AND 2.2

Section 2.1

- (1) Determine the slope of the line passing through the following points given below.
 - (a) $(-3, -7)$ and $(5, -2)$
 - (b) $\left(-\frac{3}{4}, 2\right)$ and $\left(-\frac{3}{4}, 5\right)$
 - (c) $\left(\frac{1}{2}, \frac{3}{5}\right)$ and $\left(-\frac{1}{2}, \frac{3}{5}\right)$
- (2) Write the equation of the line which passes through $(4, 12)$ and $(-5, 6)$ in point-slope form, slope-intercept form, and standard form.
- (3) Write the equation of the line which passes through $(-2, 31)$ and has an undefined slope in point-slope form, slope-intercept form, and standard form.
- (4) Write the equation of the line which passes through $(-2, 31)$ and has a slope of zero in point-slope form, slope-intercept form, and standard form.
- (5) Determine, without the aid of a graphing calculator, the x - and y -intercepts for $5x - 8y = 13$.
- (6) Given C is an integer, find the value of C so the line given by $14x + 8y = C$ has an x -intercept of $(4, 0)$.
- (7) Without the use of technology, graph the line given by the equations below.
 - (a) $y = -\frac{3}{5}(x - 1) + 4$
 - (b) $y = \frac{5}{2}x - 3$
 - (c) $x = 5$
- (8) Given the line $5x - 11y = 2$,
 - (a) if x increases by 7 units, what is the corresponding change in y ?
 - (b) if y decreases by 32 units, what is the corresponding change in x ?
- (9) Determine the slope of the line passing through the points $(a, -3)$ and $(5, 3a)$, in terms of a . For what value(s) of a is the slope of the line undefined?



Section 2.2

- (10) An item initially purchased for \$3425 has a scrap value of \$250 after 8 years. Assuming the item is depreciating linearly with time, write the value of the item (in dollars) as a function of time (in years since purchase).
- (11) A bicycle shop manufactures small bicycle pumps for riders to mount to their bikes. The shop sells each pump for \$12. The cost of producing each unit is \$4.80. The fixed costs incurred by the division are \$50,000. Find:
- (a) The shop's linear cost function for producing x small bicycle pumps.
 - (b) The shop's linear revenue function for selling x small bicycle pumps.
 - (c) The shop's linear profit function for producing and selling x small bicycle pumps.
- (12) The total cost of producing 40 items for a certain company is \$13,243. The revenue earned from selling 125 items is \$15,406.25
- (a) If the company's fixed costs are 12,225, find the company's linear cost function.
 - (b) Find the company's linear revenue function.
 - (c) Find the company's linear profit function.
- (13) The quantity demanded for a certain brand of portable CD players is 200 units when the unit price is set at \$72. The quantity demanded is 1200 units when the unit price is \$32. Find the demand equation, assuming the demand equation is linear.
- (14) A producer will not supply any items when the price is \$65 or lower, but when the price per item is \$100, the producer is willing to supply 850 items. Construct the linear supply function, $p(x)$, where p is in dollars and x is the number of items supplied.