NTI Day 1 Algebra 2 Assignment

Short Answer

1. At an automobile factory, 1849 parts are made in 4 hours. What is the average rate at which parts are made per hour?

2. A flock of Canadian geese migrated 1623 miles in 28 days. What was the average rate at which these geese traveled in miles per day?

3. The total cost to rent a row boat is $16 times the number of hours the boat is used. How long can you rent the boat for $224?

Use the scale and map measurements to find the actual distance from New Wilmington to Sharon through the specified town.

![Diagram of a triangle with measurements and scale]

Scale 1 in. : 12 mi

4. What is the actual distance from New Wilmington to Sharon through Mercer?

5. What is the actual distance from New Wilmington to Sharon through Volant?

6. A map has a scale of 1 cm : 18 km. Two cities are 2.7 cm apart on the map. To the nearest tenth of a kilometer, what is the actual distance corresponding to the map distance?
NTI Day 2 Algebra 2 Assignment

1. Geckos and iguanas are both lizards. The length of an average gecko is about three quarters of the length of an average iguana. Geckos are about 15 in. long. What is the length of an average iguana?

2. A flock of Canadian geese migrated 1623 miles in 28 days. What was the average rate at which these geese traveled in miles per day?

3. You are shopping for jeans. City Express sells 3 pairs of jeans for $61. Denim Planet sells 2 pairs of jeans for $73. New Threads sells 4 pairs of jeans for $110. Which store has the best deal?

4. Lenny runs a 100-meter course in 25 seconds. Gary runs a 450-meter course in 112.5 seconds. Bruford runs a 950-meter course in 237.5 seconds. Which athlete is the fastest? Round each speed to one decimal place.

5. You received a $12.00 credit for a website that sells movie and music files. A movie costs $1.80 to download and a song costs $.60. The equation $1.80m + 0.6s = 12.00$, where $m$ is the number of movies and $s$ is the number of songs, models the situation. How many songs can you download if you download three movies?
Algebra NTI Day 3 Algebra 2 Assignment

Date___________ Period___

1) You bought a magazine for $7 and some candy bars for $4 each. You spent a total of $23. How many candy bars did you buy?

2) You bought a magazine for $2 and some erasers for $4 each. You spent a total of $22. How many erasers did you buy?

3) The sum of three consecutive even numbers is 36. What is the smallest of these numbers?

4) Jaidee spent half of her weekly allowance on clothes. To earn more money her parents let her wash the dog for $9. What is her weekly allowance if she ended with $16?

5) Elisa had some candy to give to her three children. She first took three pieces for herself and then evenly divided the rest among her children. Each child received five pieces. With how many pieces did she start?

6) Half of your baseball card collection got wet and was ruined. You bought 12 cards to replace some that were lost. How many did you begin with if you now have 41?
Write the slope-intercept form of the equation of each line given the slope and y-intercept.

1) Slope = -2, y-intercept = -2
   2) Slope = -\frac{7}{4}, y-intercept = -5

Write the slope-intercept form of the equation of each line.

3) \(2x - y = -7\)

4) \(x + y = 3\)

5) \(y - 1 = x + 3\)

6) \(-4y = -12 - x\)

Write the slope-intercept form of the equation of the line through the given point with the given slope.

7) through: \((3, -3), \text{ slope } = -\frac{5}{3}\)

8) through: \((-4, -3), \text{ slope } = 0\)

Write the slope-intercept form of the equation of the line through the given points.

9) through: \((-5, 3) \text{ and } (-2, 5)\)

10) through: \((-4, -1) \text{ and } (4, -4)\)
Evaluate each function.

1) \( h(x) = 4x + 5; \) Find \( h(2) \)

2) \( h(n) = -4n - 2; \) Find \( h(-9) \)

3) \( f(n) = n^2 + 4; \) Find \( f(2) \)

4) \( h(n) = n^2 + 4n; \) Find \( h(-8) \)

5) \( k(x) = 4x; \) Find \( k(2n) \)

6) \( f(x) = 4x - 3; \) Find \( f(x - 3) \)

7) \( g(t) = 2t^3 + 5t^2; \) Find \( g(t + 1) \)

8) \( p(n) = -n^2 + 3n; \) Find \( p \left( \frac{n}{4} \right) \)

9) \( f(x) = x^2 + 3x; \) Find \( f(x - 3) \)

10) \( h(x) = x^3 - 5x; \) Find \( h(x - 1) \)
1. A record sells for $3 wholesale. The price the store pays is determined by the function \( f(x) = x + 3 \), where \( x \) is the wholesale price. The price the store charges is determined by \( g(x) = x + 4 \), where \( x \) is the price the store pays.
   a. Using the wholesale price, what is the price the store pays?
   
   b. Using the price the store pays, what is the price the customer pays?

2. A department store has marked down its merchandise by 25%. It later decreases by $5 the price of the items that have not sold.
   a. Write a function \( f(x) \) to represent the price after the 25% markdown.
   
   b. Write a function \( g(x) \) to represent the price after the $5 markdown.
   
   c. Does the order in which the adjustments are applied make a difference? Explain.

3. The cost of installing a boiler is $520. Each radiator costs $70.50.
   a. Write an equation of the linear function representing the cost of installing a heating system consisting of one boiler and at least one radiator.
   
   b. Given a budget of $1050, determine the greatest number of radiators that can be installed with the heating system.
1) Eugene and Krystal each improved their yards by planting rose bushes and ivy. They bought their supplies from the same store. Eugene spent $33 on 7 rose bushes and 1 pot of ivy. Krystal spent $69 on 7 rose bushes and 4 pots of ivy. Find the cost of one rose bush and the cost of one pot of ivy.

2) Mark's school is selling tickets to a play. On the first day of ticket sales the school sold 3 adult tickets and 2 student tickets for a total of $34. The school took in $38 on the second day by selling 4 adult tickets and 2 student tickets. Find the price of an adult ticket and the price of a student ticket.

3) Yellowstone National Park is a popular field trip destination. This year the senior class at High School A and the senior class at High School B both planned trips there. The senior class at High School A rented and filled 12 vans and 12 buses with 564 students. High School B rented and filled 3 vans and 2 buses with 110 students. Every van had the same number of students in it as did the buses. Find the number of students in each van and in each bus.

4) Gabriella's school is selling tickets to the annual dance competition. On the first day of ticket sales the school sold 11 senior citizen tickets and 3 student tickets for a total of $104. The school took in $109 on the second day by selling 4 senior citizen tickets and 9 student tickets. What is the price each of one senior citizen ticket and one student ticket?
1) A plane traveled 315 miles each way to Las Vegas and back. The trip there was with the wind. It took 3 hours. The trip back was into the wind. The trip back took 7 hours. Find the speed of the plane in still air and the speed of the wind.

2) Jose and Ted each improved their yards by planting grass sod and geraniums. They bought their supplies from the same store. Jose spent $45 on 3 ft$^2$ of grass sod and 6 geraniums. Ted spent $90 on 10 ft$^2$ of grass sod and 5 geraniums. What is the cost of one ft$^2$ of grass sod and the cost of one geranium?

3) Eduardo and Matt are selling fruit for a school fundraiser. Customers can buy small boxes of tangerines and large boxes of tangerines. Eduardo sold 16 small boxes of tangerines and 14 large boxes of tangerines for a total of $392. Matt sold 7 small boxes of tangerines and 5 large boxes of tangerines for a total of $149. Find the cost each of one small box of tangerines and one large box of tangerines.

4) A plane traveled 828 miles each way to Jacksonville and back. The trip there was with the wind. It took 6 hours. The trip back was into the wind. The trip back took 9 hours. What is the speed of the plane in still air? What is the speed of the wind?

5) DeShawn and Amanda are selling flower bulbs for a school fundraiser. Customers can buy packages of tulip bulbs and bags of daffodil bulbs. DeShawn sold 7 packages of tulip bulbs and 15 bags of daffodil bulbs for a total of $297. Amanda sold 2 packages of tulip bulbs and 7 bags of daffodil bulbs for a total of $131. What is the cost each of one package of tulips bulbs and one bag of daffodil bulbs?
1) Sarah's age is ten years more than twice Tanya's age. The sum of their ages is 64. How old is Sarah?

2) The length of a rectangle is 2 m more than its width. The perimeter is 60 m. What is its width?

3) A collection of dimes and quarters has a total value of $3.95. If there are 20 coins in the collection, how many are there of each kind?

4) The length of a certain rectangle is 15 cm more than three times its width. If the perimeter of the rectangle is 94 cm, what is the area?

5) One number is 20 greater than another. If the lesser number is subtracted from three times the greater number, the difference is 84. Find the numbers.

6) Six times a certain number is 12 more than four times the number. Find the number.
1) Diegueno is selling ticket for the dance. Tickets purchased in advance cost $4 while tickets at the door cost $6. If 325 tickets are sold and $1430 is collected, how many tickets were sold in advance?

2) The sum of five more than a certain number and 10 more than twice the number is equal to the product of 2 and the number increased by eight. Find the number.

3) The formula for the area of a trapezoid is \( A = \frac{1}{2} h(b_1 + b_2) \) where \( h \) is the height and \( b_1 \) and \( b_2 \) are the bases (parallel sides). Find the height when the area is 60 \( m^2 \) and the bases are 16m and 20m.

4) The formula \( P = 2l + 2w \) gives the perimeter \( P \) of a rectangle in terms of its length \( l \) and width \( w \). If the perimeter is 50 cm and the width is 6 cm, find the length of the rectangle.

5) The formula \( P = 2l + 2w \) gives the perimeter \( P \) of a rectangle in terms of its length \( l \) and width \( w \).
a) Express the length in terms of P and w.
b) If a rectangle has a perimeter of 46 cm and a width of 5 cm, what is the length?