

Section 5.2

Exercises

For each linear function, find the slope, the y intercept, the x intercept, $f(3)$ and $f(-1)$.

Then use the information to graph the linear function.

1. $f(x) = 2x - 6$
2. $f(x) = -3x + 5$
3. $f(x) = \frac{2}{5}x + 1$
4. $f(x) = \frac{-1}{3}x - 4$
5. $f(x) = 0.75x - 1.8$
6. $f(x) = -0.28x + 6.1$

The linear function $F(C) = \frac{9}{5}C + 32$ converts

temperature given in the Celsius scale to degrees Fahrenheit. Use the function to convert each of the following Celsius temperatures to degrees Fahrenheit.

7. $45^{\circ}C$
8. $-15^{\circ}C$
9. $23^{\circ}C$
10. $18^{\circ}C$

The linear function $P(x) = 152x - 10000$ gives a company's profit when they make and sell x items. Use the function to determine the company's profits at each of the following level of sales.

11. 100 units
12. 2000 units
13. 1273 units
14. 397 units

For each problem, write a linear function that models the situation. Then use the linear function to solve the problem.

15. A company produces skateboards. Their weekly costs to produce the skateboards include \$35,000 in fixed expenses and \$24 in material costs for each skateboard. What will be their total costs if they produce 1500 skateboards in a week?

16. Robin's employer pays her a base salary of \$1200 per month plus a commission of 3% of her total sales. How much will she earn in a month when her total sales are \$150,000?

17. A rental car company rents its cars for \$29 per day with a mileage charge of \$0.18 for each mile driven. Suppose you rent a car from this company for 4 days and drive 785 miles. Find the total cost to rent this car.

18. A weight loss program projects that clients who follow the program will lose weight at the rate of 1.5 pounds per week, on average. If a person starts the program weighing 215 pounds and follows the program, how much will the client expect to weigh after following the program for 14 weeks?

19. One inch corresponds to 2.54 cm in the metric system. One foot corresponds to 30.48 cm. Using this information, write a linear function that expresses length in inches in the US Customary System in terms of metric measurement. Use your function to convert 34 inches and 6 feet to metric measurement.

20. A gym offers two different membership packages. The Unlimited Package allows members to use the gym any time it's open for a membership fee of \$52 per month. The Budget Plan costs only \$25 per month, but a member must pay \$4 for each workout. How many times would a member need to work out each month for the Unlimited Package to be the better value?