

Name _____

Score _____

Find the equation of the line through the given points.

1. $P_1(1, 4), P_2(2, 3)$

2. $P_1(1, 3), P_2(0, 4)$

1. _____

2. _____

3. $P_1(1, 2), P_2(4, 4)$

4. $P_1(3, 1), P_2(5, 2)$

3. _____

4. _____

Additional Objective 3.5.3 Exercises

Solve.

1. A building contractor estimates that the cost to build a home is \$35,000 plus \$95 for each square foot of floor space in the house.
- Determine a linear function that will give the cost of building a house that contains a given number of square feet.
 - Use this model to determine the cost to build a house containing 1500 sq. ft.

2. The gas tank of a certain car contains 13 gal when the driver of the car begins a trip. Each mile driven by the driver decreases the amount of gas in the tank by 0.025 gal.

1. a. _____

b. _____

- Write a linear function for the number of gallons of gas in the tank in terms of the number of miles driven.
- Use your equation to find the number of gallons in the tank after 180 miles are driven.

2. a. _____

b. _____

3. A manufacturer of minivans determined that 75,000 cars per month can be sold at a price of \$24,000. At a price of \$23,500 the number of minivans sold per month would increase to 80,000.
- Determine a linear function that will predict the number of cars that would be sold each month at a given price.
 - Use this model to predict the number of cars that would be sold at a price of \$23,250.

4. An account executive receives a base salary plus a commission. On \$25,000 in monthly sales, the account executive receives \$2450. On \$40,000 in monthly sales, the account executive receives \$3200.

3. a. _____

b. _____

- Determine a linear function that will yield the compensation of the account executive for a given amount of monthly sales.
- Use this model to determine the account executive's compensation for \$70,000 in monthly sales.

4. a. _____

b. _____

5. There are approximately 90 Calories in a 4 oz serving of cottage cheese and approximately 135 Calories in a 6 oz serving.
- Determine a linear function for the number of Calories in a serving of cottage cheese in terms of the size of the serving.
 - Use your equation to estimate the number of Calories in a 5 oz serving.

6. A cellular phone company offers a plan for people who plan to use the phone only in emergencies. The plan costs the user \$7.95 per month plus \$0.69 per minute used.

5. a. _____

b. _____

- Write a linear function for the monthly cost in terms of the number of minutes used.
- Use your equation to find the cost of using the cellular phone for 9 minutes in one month.

6. a. _____

b. _____

Name _____

Score _____

Solve.

1. Is the line $x = -1$ perpendicular to the line $y = 2$?

1. _____

3. Is the line $y = 2x - 5$ parallel to the line $y = -\frac{1}{2}x - 5$?

3. _____

5. Is the line $y = \frac{3}{2}x - 1$ perpendicular to the line $y = -\frac{2}{3}x + 3$?

6. Are the lines $x + 2y = 1$ and $x + 2y = -3$ parallel?

5. _____

6. _____

9. Is the line that contains the points $(4, -5)$ and $(11, -10)$ perpendicular to the line that contains the points $(3, 7)$ and $(-2, 0)$?

10. Find the equation of the line containing the point $(-2, -5)$ and parallel to the line $x + 3y = 5$.

9. _____

10. _____

11. Find the equation of the line containing the point $(3, -1)$ and perpendicular to the line $y = -4x + 7$.

12. Find the equation of the line containing the point $(4, 3)$ and parallel to the line $5x - 3y = 8$.

11. _____

12. _____

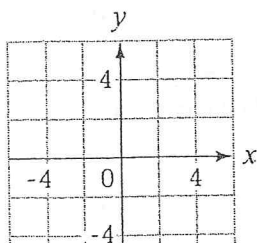
15. Find the equation of the line containing the point $(-2, -2)$ and parallel to the line $2x - 3y = 3$.

15. _____

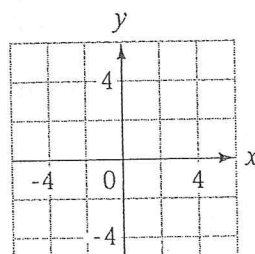
Additional Objective 3.7.1 Exercises

Graph the solution set.

1. $y \geq -x + 2$



3. $x + 3y \leq 6$



5. $5x - 2y < 10$

