

**Additional Exercises 2.1**  
**Form I**  
The Addition Property of Equality

Identify the following equations in one variable as linear or not linear.

1.  $x + 7 = 5$  1. \_\_\_\_\_

2.  $x^2 + 4 = 7$  2. \_\_\_\_\_

3.  $\frac{11}{x} = 5$  3. \_\_\_\_\_

4.  $|x + 4| = 8$  4. \_\_\_\_\_

Solve the equation using the addition property of equality.

5.  $a - 21 = -9$  5. \_\_\_\_\_

6.  $x + 17 = 28$  6. \_\_\_\_\_

7.  $4 = b - 9$  7. \_\_\_\_\_

8.  $t - 8 = 15$  8. \_\_\_\_\_

9.  $x + \frac{2}{6} = \frac{2}{6}$  9. \_\_\_\_\_

10.  $x + 0.7 = 1.5$  10. \_\_\_\_\_

11.  $8 = -14 + x$  11. \_\_\_\_\_

12.  $-31 = x - 14$  12. \_\_\_\_\_

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13.  $-14.5 = 12.2 + x$  13. \_\_\_\_\_

14.  $13 + 6p = 7p$  14. \_\_\_\_\_

15.  $8y = 7y - 8.8$  15. \_\_\_\_\_

Solve.

16. The cost of having a car towed is given by the formula  $C = 3x + 65$ , where  $C$  is in dollars and  $x$  is the number of miles the car is towed. Find the cost of having a car towed 3 miles. 16. \_\_\_\_\_

17. The formula  $C = 537x + 165$  models the cost to produce  $x$  units of product, where  $C$  is given in dollars. Find the total cost if 100 units are produced. 17. \_\_\_\_\_

18. The monthly cost of a certain long distance service is given by the formula  $C = 0.07t + 4.95$  where  $C$  is in dollars and  $t$  is the amount of time in minutes called in a month. Find the cost of calling long distance for 100 minutes a month. 18. \_\_\_\_\_

19. The amount of water in a leaky bucket is given by the formula  $f = 115 - 7t$ , where  $f$  is in ounces and  $t$  is in minutes. Find the amount of water in the bucket after 5 minutes. 19. \_\_\_\_\_

20. The altitude above sea level of an airplane just after taking off from an airport on a high plateau is given by the formula  $h = 700t + 2882$ , where  $h$  is in feet and  $t$  is the time in minutes since takeoff. Find the altitude of the airplane after 3 minutes. 20. \_\_\_\_\_

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**Additional Exercises 2.1**  
**Form II**  
The Addition Property of Equality

Identify the following equations in one variable as linear or not linear.

1.  $x + 1 = 11$  1. \_\_\_\_\_

2.  $x^2 - 8 = 12$  2. \_\_\_\_\_

3.  $\frac{9}{x} = 4$  3. \_\_\_\_\_

4.  $3x = 15$  4. \_\_\_\_\_

Solve the equation using the addition property of equality.

5.  $21 + x = 7$  5. \_\_\_\_\_

6.  $-8 + y = 11$  6. \_\_\_\_\_

7.  $\frac{1}{3} + y = \frac{2}{3}$  7. \_\_\_\_\_

8.  $\frac{1}{5} + x = 3$  8. \_\_\_\_\_

9.  $2.4 + y = 3.6$  9. \_\_\_\_\_

10.  $\frac{2}{5} + b = \frac{1}{4}$  10. \_\_\_\_\_

11.  $1.3 + x = 19.2$  11. \_\_\_\_\_

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12.  $x + \frac{1}{4} = -\frac{7}{2}$

12. \_\_\_\_\_

13.  $510 + y = 820$

13. \_\_\_\_\_

14.  $-7.1 + y = 7.1$

14. \_\_\_\_\_

15.  $y + \frac{5}{7} = \frac{5}{7}$

15. \_\_\_\_\_

Solve.

16. The cost of having a car towed is given by the formula  $C = 3x + 65$ , where  $C$  is in dollars and  $x$  is the number of miles the car is towed. Find the cost of having a car towed 12 miles.

16. \_\_\_\_\_

17. The formula  $C = 537x + 165$  models the cost to produce  $x$  units of product, where  $C$  is given in dollars. Find the total cost if 125 units are produced.

17. \_\_\_\_\_

18. The monthly cost of a certain long distance service is given by the formula  $C = 0.07t + 4.95$  where  $C$  is in dollars and  $t$  is the amount of time in minutes called in a month. Find the cost of calling long distance for 120 minutes a month.

18. \_\_\_\_\_

19. The amount of water in a leaky bucket is given by the formula  $f = 115 - 7t$ , where  $f$  is in ounces and  $t$  is in minutes. Find the amount of water in the bucket after 10 minutes.

19. \_\_\_\_\_

20. The altitude above sea level of an airplane just after taking off from an airport on a high plateau is given by the formula  $h = 700t + 2882$ , where  $h$  is in feet and  $t$  is the time in minutes since takeoff. Find the altitude of the airplane after 5 minutes.

20. \_\_\_\_\_

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**Additional Exercises 2.1**  
**Form III**  
The Addition Property of Equality

Identify the following equations in one variable as linear or not linear.

1.  $x + 51 = 80$  1. \_\_\_\_\_

2.  $x^2 + 13 = 20$  2. \_\_\_\_\_

3.  $\frac{5}{x} = 7$  3. \_\_\_\_\_

4.  $|9 + x| = 10$  4. \_\_\_\_\_

Solve the equation using the addition property of equality.

5.  $x - \frac{1}{2} = \frac{9}{10}$  5. \_\_\_\_\_

6.  $x + \frac{1}{6} = -\frac{5}{12}$  6. \_\_\_\_\_

7.  $510 + x = -805$  7. \_\_\_\_\_

8.  $x + 1.3 = 7$  8. \_\_\_\_\_

9.  $x + 9.5 = -4$  9. \_\_\_\_\_

10.  $-4y + 9 = -5y - 11$  10. \_\_\_\_\_

11.  $6x + 4 = 5(x + 2)$  11. \_\_\_\_\_

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12.  $9x + 11 + 2 = 8(x - 6)$  12. \_\_\_\_\_

13.  $14 - 3s = 12 - 4s$  13. \_\_\_\_\_

14.  $-4x + 5 + 3x = 12 - 4$  14. \_\_\_\_\_

15.  $-4.1 + 5x = 4x - 4.1$  15. \_\_\_\_\_

Solve.

16. The cost of having a car towed is given by the formula  $C = 3x + 65$ , where  $C$  is in dollars and  $x$  is the number of miles the car is towed. Find the cost of having a car towed 52 miles. 16. \_\_\_\_\_

17. The formula  $C = 537x + 165$  models the cost to produce  $x$  units of product, where  $C$  is given in dollars. Find the total cost if 210 units are produced. 17. \_\_\_\_\_

18. The monthly cost of a certain long distance service is given by the formula  $C = 0.07t + 4.95$  where  $C$  is in dollars and  $t$  is the amount of time in minutes called in a month. Find the cost of calling long distance for 200 minutes a month. 18. \_\_\_\_\_

19. The amount of water in a leaky bucket is given by the formula  $f = 115 - 7t$ , where  $f$  is in ounces and  $t$  is in minutes. Find the amount of water in the bucket after 12 minutes. 19. \_\_\_\_\_

20. The altitude above sea level of an airplane just after taking off from an airport on a high plateau is given by the formula  $h = 700t + 2882$ , where  $h$  is in feet and  $t$  is the time in minutes since takeoff. Find the altitude of the airplane after 10 minutes. 20. \_\_\_\_\_