Exercise 6.1

answers on p. 432

Find the solutions of each of the following pairs of simultaneous equations. Decide which unknown can be eliminated more easily first.

1. $7x - 2y = 29$
$7x + y = 38$

2. $10x - 3y = 18$
$8x + 3y = 36$

3. $5x - 6y = 8$
$7x + 6y = 40$

4. $x + 6y = 10$
$x - 9y = -20$

5. $5x + 3y = 30$
$x - 3y = -12$

6. $6x + y = 32$
$6x - 3y = 24$

7. $2x + 6y = 20$
$2x + 5y = 17$

8. $3y + 4x = 9$
$3y + 5x = 12$

9. $8x + 4y = 36$
$8x + 3y = 33$

10. $10x + 7y = -31$
$15x + 7y = -36$

11. $4x + 6y = -4$
$9x + 6y = 6$

12. $7y - 5x = 1$
$7y + 8x = 53$

Exercise 6.2

answers on p. 432

Solve the following equations.

1. $3x - 2y = 7$
$4x + 5y = 40$

2. $2x - 7y = 1$
$5x + 17y = 37$

3. $8x + 2y = 13$
$16x + y = 14$

4. $12x + 10y = 30$
$27x - 5y = 315$

5. $-7x + 12y = -11$
$50x + 9y = 47$

6. $12x + 3y = 36$
$5x + y = 15$

7. $6x - 5y = 3$
$3x + 11y = -39$

8. $3x - 5y = 21$
$x - 4y = 3$

9. $2x + 6y = 13$
$8x + y = 6$

10. $x + 3y = 5$
$7x - 6y = 44$

11. $12x + 4y = 5$
$2x + 3y = 3$

12. $5x - 2y = 0$
$3x + 5y = 31$

13. $9x + 24y = -13$
$15x - 12y = 13$

14. $6x - 5y = -3$
$x + y = 5$

15. $7x + 4y = 20$
$3x + 2y = 8$

16. $3x + 7y = 8$
$2x + 2y = 12$

17. $12x + 3y = 4$
$4x + y = 1$

18 $2x - 6y = -2$
$x - 3y = -1$

19. $3x - 5y = 11$
$6x - 10y = 21$

20. $7x + 3y = -11$
$14x - 6y = 22$

21. $21m + 7n + 7 = 0$
$28m + 8n + 12 = 0$

22. $7p - 5q - 31 = 0$
$16p + 15q - 18 = 0$

23. $3a + 14b + 27 = 0$
$12a - 25b - 135 = 0$

24. $8r - 11s + 65 = 0$
$12r + 13s + 9 = 0$

Exercise 6.1 *(p. 141)*

1. $x = 5, y = 3$
2. $x = 3, y = 4$
3. $x = 4, y = 2$
4. $x = -2, y = 2$
5. $x = 3, y = 5$
6. $x = 5, y = 2$
7. $x = 1, y = 3$
8. $x = 3, y = -1$
9. $x = 3, y = 3$
10. $x = -1, y = -3$
11. $x = 2, y = -2$
12. $x = 4, y = 3$

Exercise 6.2 *(p. 144)*

1. $x = 5, y = 4$
2. $x = 4, y = 1$
3. $x = \frac{5}{8}, y = 4$
4. $x = 10, y = -9$
5. $x = 1, y = -\frac{1}{3}$
6. $x = 3, y = 0$
7. $x = -2, y = -3$
8. $x = 9\frac{6}{7}, y = 1\frac{5}{7}$
9. $x = \frac{1}{2}, y = 2$
10. $x = 6, y = -\frac{1}{3}$
11. $x = \frac{3}{28}, y = \frac{13}{14}$
12. $x = 2, y = 5$
13. $x = \frac{1}{3}, y = -\frac{2}{3}$
14. $x = 2, y = 3$
15. $x = 4, y = -2$
16. $x = 8\frac{1}{2}, y = -2\frac{1}{2}$
17. No solution
18. Infinite number of solutions
19. No solution
20. $x = 0, y = -\frac{11}{3}$
21. $m = -1, n = 2$
22. $p = 3, q = -2$
23. $a = 5, b = -3$
24. $r = -4, s = 3$