1. **Réduction d'e*x*pressions littérales**

1. 5*x* + *x* + 4y + 4y + 10*x* + 5y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. 4*x* + 7*x* + 6y + 2*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. 6*x* + 8y + 8*x* + y + 3*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. 2y + 3*x* + 10*x* + 5y + 4y + 8*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. 9*x* + 5*x* + 7*x* + 8*x* + 3y + 8y + 8y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. 3*x* + 8*x* + y + 5y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
7. 6*x* + y + 8*x* + *x* + 8*x* + 3*x* + 4*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
8. 4*x* + 8*x* + 9*x* + 10*x* + 5*x* + 5y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
9. 7y + 6*x* + 7y + 7*x* + 2y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
10. 3y + 5*x* + 5y + 7y + 5*x* + 7*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
11. 3y + 2*x* + 5*x* + 2*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
12. 7y + 5*x* + 2y + y + 4*x* + 6*x* + 5y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
13. 9y + 6*x* + y + y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
14. *x* + 5*x* + 5*x* + 5*x* + 7y + 5y + 3y + 3*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
15. 8*x* + 2*x* + 3y + 8y + 4*x* + 9*x* + 9*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
16. 10*x* + 8y + 3y + 6*x* + 10y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
17. *x* + 6*x* + y + 10y + 8y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
18. 5y + 5y + 9y + 9y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
19. 2*x* + 8*x* + 10*x* + 3*x* + 2*x* + 6y + 8y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
20. 8y + 3*x* + 8*x* + 5*x* + y + 4*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
21. **Solutions**

1. 5*x* + *x* + 4y + 4y + 10*x* + 5y = 16*x* + 13y
2. 4*x* + 7*x* + 6y + 2*x* = 13*x* + 6y
3. 6*x* + 8y + 8*x* + y + 3*x* = 17*x* + 9y
4. 2y + 3*x* + 10*x* + 5y + 4y + 8*x* = 21*x* + 11y
5. 9*x* + 5*x* + 7*x* + 8*x* + 3y + 8y + 8y = 29*x* + 19y
6. 3*x* + 8*x* + y + 5y = 11*x* + 6y
7. 6*x* + y + 8*x* + *x* + 8*x* + 3*x* + 4*x* = 30*x* + y
8. 4*x* + 8*x* + 9*x* + 10*x* + 5*x* + 5y = 36*x* + 5y
9. 7y + 6*x* + 7y + 7*x* + 2y = 13*x* + 16y
10. 3y + 5*x* + 5y + 7y + 5*x* + 7*x* = 17*x* + 15y
11. 3y + 2*x* + 5*x* + 2*x* = 9*x* + 3y
12. 7y + 5*x* + 2y + y + 4*x* + 6*x* + 5y = 15*x* + 15y
13. 9y + 6*x* + y + y = 6*x* + 11y
14. *x* + 5*x* + 5*x* + 5*x* + 7y + 5y + 3y + 3*x* = 19*x* + 15y
15. 8*x* + 2*x* + 3y + 8y + 4*x* + 9*x* + 9*x* = 32*x* + 11y
16. 10*x* + 8y + 3y + 6*x* + 10y = 16*x* + 21y
17. *x* + 6*x* + y + 10y + 8y = 7*x* + 19y
18. 5y + 5y + 9y + 9y = 28y
19. 2*x* + 8*x* + 10*x* + 3*x* + 2*x* + 6y + 8y = 25*x* + 14y
20. 8y + 3*x* + 8*x* + 5***x*** + y + 4*x* = 20*x* + 9y
21. **Réduction d'e*x*pressions littérales**
22. 8y + 6y + 6*x* + 10y + 5y + 5y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
23. 10*x* + y + 3*x* + 4y + 8y + 8*x* + 6y + 9*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
24. 6y + 3y + 4*x* + 2*x* + 4y + 8y + 10y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
25. 2*x* + 5*x* + 3*x* + *x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
26. 10*x* + 6*x* + *x* + 8y + 9y + 8*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
27. 5*x* + 2y + 3*x* + 6y + 3*x* + y + 10y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
28. y + 4*x* + 6y + 6y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
29. 7*x* + *x* + 4*x* + 9*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
30. 8*x* + 2*x* + *x* + 9*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
31. 4*x* + 2y + 2*x* + 2*x* + 5y + 6*x* + 5y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
32. 9*x* + y + 5*x* + 2y + y + 9y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
33. 2y + 10y + 4y + 6y + 5*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
34. 9y + 9y + 5*x* + 6y + 9y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
35. 8y + 6y + 9*x* + 5y + 5y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
36. 2y + 9y + 7y + 8y + 6*x* + 10y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
37. 7*x* + 9*x* + 3y + 7*x* + 3y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
38. 2y + 2*x* + 7y + 8*x* + 9*x* + 4*x* + y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
39. 4*x* + 3*x* + *x* + 10y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
40. 4*x* + 10*x* + 2y + 8*x* + 10y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
41. 2y + 5*x* + 3y + 8*x* + 9y + 5y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
42. **Solutions**

1. 8y + 6y + 6*x* + 10y + 5y + 5y = 6*x* + 34y
2. 10*x* + y + 3*x* + 4y + 8y + 8*x* + 6y + 9*x* = 30*x* + 19y
3. 6y + 3y + 4*x* + 2*x* + 4y + 8y + 10y = 6*x* + 31y
4. 2*x* + 5*x* + 3*x* + *x* = 11*x*
5. 10*x* + 6*x* + *x* + 8y + 9y + 8*x* = 25*x* + 17y
6. 5*x* + 2y + 3*x* + 6y + 3*x* + y + 10y = 11*x* + 19y
7. y + 4*x* + 6y + 6y = 4*x* + 13y
8. 7*x* + *x* + 4*x* + 9*x* = 21*x*
9. 8*x* + 2*x* + *x* + 9*x* = 20*x*
10. 4*x* + 2y + 2*x* + 2*x* + 5y + 6*x* + 5y = 14*x* + 12y
11. 9*x* + y + 5*x* + 2y + y + 9y = 14*x* + 13y
12. 2y + 10y + 4y + 6y + 5*x* = 5*x* + 22y
13. 9y + 9y + 5*x* + 6y + 9y = 5*x* + 33y
14. 8y + 6y + 9*x* + 5y + 5y = 9*x* + 24y
15. 2y + 9y + 7y + 8y + 6*x* + 10y = 6*x* + 36y
16. 7*x* + 9*x* + 3y + 7*x* + 3y = 23*x* + 6y
17. 2y + 2*x* + 7y + 8*x* + 9*x* + 4*x* + y = 23*x* + 10y
18. 4*x* + 3*x* + *x* + 10y = 8*x* + 10y
19. 4*x* + 10*x* + 2y + 8*x* + 10y = 22*x* + 12y
20. 2y + 5*x* + 3y + 8*x* + 9y + 5y = 13*x* + 19y
21. **Réduction d'e*x*pressions littérales**

1. 6*x* + 9y + 2y + 2y + 10y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. 5*x* + 7*x* + 8y + 9*x* + 10*x* + 5y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. 3*x* + 8*x* + 9*x* + 9*x* + 9*x* + 10y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. 9*x* + 2y + 9*x* + 2*x* + 10*x* + 6*x* + 6*x* + 6y =\_\_\_\_\_\_\_\_\_\_\_\_
5. 10y + 8y + 5*x* + 2y + 4y + 9*x* + 6*x* + 10*x* =\_\_\_\_\_\_\_\_\_\_\_
6. 2*x* + 9*x* + 9*x* + 9*x* + 6*x* + 6y + 8*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
7. 3y + 7y + 7y + 4*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
8. 10y + 10*x* + 4*x* + 9y + 6*x* + y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
9. 9y + 7y + 2y + 9*x* + y + 8y + 10y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
10. 6y + 2*x* + 3y + 10*x* + 9y + 7y + 2y + 4y =\_\_\_\_\_\_\_\_\_\_\_\_
11. 2*x* + 3y + 10y + 7y + 4*x* + *x* + 4y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
12. 8y + 9y + 4*x* + 6*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
13. 4*x* + 7*x* + 9*x* + 6y + 8*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
14. 10*x* + 5*x* + y + 5*x* + 8y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
15. 3y + 7*x* + 5*x* + 9y + 2y + 9y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
16. 4y + 4*x* + 6*x* + 2*x* + 6*x* + 8*x* + 6*x* + 2y =\_\_\_\_\_\_\_\_\_\_\_\_\_
17. 10*x* + 2*x* + 10*x* + 2y + 2y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
18. 4y + 8y + 2*x* + 2*x* + 5*x* + 8y + 3y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
19. 8*x* + 2*x* + 10*x* + 6y + 9y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
20. 5y + 2*x* + 5*x* + 8y + 4*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
21. **Solutions**

1. 6*x* + 9y + 2y + 2y + 10y = 6*x* + 23y
2. 5*x* + 7*x* + 8y + 9*x* + 10*x* + 5y = 31*x* + 13y
3. 3*x* + 8*x* + 9*x* + 9*x* + 9*x* + 10y = 38*x* + 10y
4. 9*x* + 2y + 9*x* + 2*x* + 10*x* + 6*x* + 6*x* + 6y = 42*x* + 8y
5. 10y + 8y + 5*x* + 2y + 4y + 9*x* + 6*x* + 10*x* = 30*x* + 24y
6. 2*x* + 9*x* + 9*x* + 9*x* + 6*x* + 6y + 8*x* = 43*x* + 6y
7. 3y + 7y + 7y + 4*x* = 4*x* + 17y
8. 10y + 10*x* + 4*x* + 9y + 6*x* + y = 20*x* + 20y
9. 9y + 7y + 2y + 9*x* + y + 8y + 10y = 9*x* + 37y
10. 6y + 2*x* + 3y + 10*x* + 9y + 7y + 2y + 4y = 12*x* + 31y
11. 2*x* + 3y + 10y + 7y + 4*x* + *x* + 4y = 7*x* + 24y
12. 8y + 9y + 4*x* + 6*x* = 10*x* + 17y
13. 4*x* + 7*x* + 9*x* + 6y + 8*x* = 28*x* + 6y
14. 10*x* + 5*x* + y + 5*x* + 8y = 20*x* + 9y
15. 3y + 7*x* + 5*x* + 9y + 2y + 9y = 12*x* + 23y
16. 4y + 4*x* + 6*x* + 2*x* + 6*x* + 8*x* + 6*x* + 2y = 32*x* + 6y
17. 10*x* + 2*x* + 10*x* + 2y + 2y = 22*x* + 4y
18. 4y + 8y + 2*x* + 2*x* + 5*x* + 8y + 3y = 9*x* + 23y
19. 8*x* + 2*x* + 10*x* + 6y + 9y = 20*x* + 15y
20. 5y + 2*x* + 5*x* + 8y + 4*x* = 11*x* + 13y
21. **Réduction d'e*x*pressions littérales**

1. 3*x* + 2y + 9*x* + 9y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. 2y + 4*x* + 5y + 4*x* + 10*x* + 8*x* + 7y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. 10y + 10y + 7y + 4y + y + 7y + 7y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. 4y + 4y + 2*x* + 9*x* + *x* + 3*x* + 9y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. 8*x* + 2*x* + 7*x* + 7*x* + 9*x* + 7y + 5y + 7*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_
6. 3y + 3y + 9*x* + 6*x* + 2y + 4y + 5*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
7. 3*x* + 3y + 10*x* + *x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
8. 8y + 10*x* + 10y + 5*x* + 4y + 5y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
9. 8*x* + 7y + 9*x* + 2*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
10. 8y + 9*x* + 5y + 8y + y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
11. 6*x* + 8y + 3y + *x* + 7*x* + *x* + 5y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
12. 2*x* + 5*x* + 2y + 4*x* + 6*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
13. 6y + 7*x* + 9y + 5*x* + y + 10y + 3y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
14. 5y + 5*x* + 5*x* + 7y + 9y + 10y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
15. 4y + 6y + 3y + *x* + 10y + 2y + 8*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
16. 4y + 5*x* + 2*x* + *x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
17. 10*x* + 7*x* + 10*x* + 9*x* + 8*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
18. y + 9y + 6*x* + 9*x* + 4y + 7y + 7*x* + 2*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_
19. 6*x* + 7y + 7y + 5y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
20. 4y + 7*x* + 3y + 5y + 8*x* + 3y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
21. **Solutions**
22. 3*x* + 2y + 9*x* + 9y = 12*x* + 11y
23. 2y + 4*x* + 5y + 4*x* + 10*x* + 8*x* + 7y = 26*x* + 14y
24. 10y + 10y + 7y + 4y + y + 7y + 7y = 46y
25. 4y + 4y + 2*x* + 9*x* + *x* + 3*x* + 9y = 15*x* + 17y
26. 8*x* + 2*x* + 7*x* + 7*x* + 9*x* + 7y + 5y + 7*x* = 40*x* + 12y
27. 3y + 3y + 9*x* + 6*x* + 2y + 4y + 5*x* = 20*x* + 12y
28. 3*x* + 3y + 10*x* + *x* = 14*x* + 3y
29. 8y + 10*x* + 10y + 5*x* + 4y + 5y = 15*x* + 27y
30. 8*x* + 7y + 9*x* + 2*x* = 19*x* + 7y
31. 8y + 9*x* + 5y + 8y + y = 9*x* + 22y
32. 6*x* + 8y + 3y + *x* + 7*x* + *x* + 5y = 15*x* + 16y
33. 2*x* + 5*x* + 2y + 4*x* + 6*x* = 17*x* + 2y
34. 6y + 7*x* + 9y + 5*x* + y + 10y + 3y = 12*x* + 29y
35. 5y + 5*x* + 5*x* + 7y + 9y + 10y = 10*x* + 31y
36. 4y + 6y + 3y + *x* + 10y + 2y + 8*x* = 9*x* + 25y
37. 4y + 5*x* + 2*x* + *x* = 8*x* + 4y
38. 10*x* + 7*x* + 10*x* + 9*x* + 8*x* = 44*x*
39. y + 9y + 6*x* + 9*x* + 4y + 7y + 7*x* + 2*x* = 24*x* + 21y
40. 6*x* + 7y + 7y + 5y = 6*x* + 19y
41. 4y + 7*x* + 3y + 5y + 8*x* + 3y = 15*x* + 15y
42. **Réduction d'e*x*pressions littérales**

1. 8y + 6y + 3*x* + 4*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. 7*x* + 6y + 3y + 10y + 5*x* + 2*x* + 3y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. 7*x* + 8*x* + 7*x* + 4*x* + y + 6*x* + 6*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. 6y + 7*x* + 2*x* + 2y + 3*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. 6y + 6y + 4*x* + 4y + 7*x* + 2*x* + 9y + *x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. 4y + *x* + *x* + 2*x* + 4*x* + 2*x* + 2y + 7*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
7. 7*x* + 9*x* + 7y + 9*x* + 10*x* + 2y + 6y + 5*x* =\_\_\_\_\_\_\_\_\_\_\_\_
8. 10*x* + 10y + 5y + 9*x* + 3y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
9. 2y + 10y + 7*x* + 8y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
10. 4y + *x* + 4*x* + 10*x* + 10y + 8*x* + 8*x* + 8y =\_\_\_\_\_\_\_\_\_\_\_\_
11. 7y + 10*x* + 7*x* + 2*x* + 3*x* + 3y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
12. 7y + 6y + 4y + 9y + 5*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
13. 3y + 4*x* + 7y + 10y + 6y + 4*x* + 5y + 10*x* =\_\_\_\_\_\_\_\_\_\_\_
14. 7*x* + *x* + 3*x* + 6y + 9y + 8y + *x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
15. y + 10*x* + y + 9*x* + 9y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
16. 3*x* + 4*x* + 4y + 7y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
17. 10y + 4y + 2*x* + 10*x* + *x* + 3*x* + *x* + 4*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_
18. 8*x* + 7*x* + 8y + 10y + *x* + 8y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
19. 2*x* + 2*x* + 3y + 5*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
20. 3y + 5y + 7*x* + 3*x* + 4*x* + 8*x* + y + 7*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_
21. **Solutions**
22. 8y + 6y + 3*x* + 4*x* = 7*x* + 14y
23. 7*x* + 6y + 3y + 10y + 5*x* + 2*x* + 3y = 14*x* + 22y
24. 7*x* + 8*x* + 7*x* + 4*x* + y + 6*x* + 6*x* = 38*x* + y
25. 6y + 7*x* + 2*x* + 2y + 3*x* = 12*x* + 8y
26. 6y + 6y + 4*x* + 4y + 7*x* + 2*x* + 9y + *x* = 14*x* + 25y
27. 4y + *x* + *x* + 2*x* + 4*x* + 2*x* + 2y + 7*x* = 17*x* + 6y
28. 7*x* + 9*x* + 7y + 9*x* + 10*x* + 2y + 6y + 5*x* = 40*x* + 15y
29. 10*x* + 10y + 5y + 9*x* + 3y = 19*x* + 18y
30. 2y + 10y + 7*x* + 8y = 7*x* + 20y
31. 4y + *x* + 4*x* + 10*x* + 10y + 8*x* + 8*x* + 8y = 31*x* + 22y
32. 7y + 10*x* + 7*x* + 2*x* + 3*x* + 3y = 22*x* + 10y
33. 7y + 6y + 4y + 9y + 5*x* = 5*x* + 26y
34. 3y + 4*x* + 7y + 10y + 6y + 4*x* + 5y + 10*x* = 18*x* + 31y
35. 7*x* + *x* + 3*x* + 6y + 9y + 8y + *x* = 12*x* + 23y
36. y + 10*x* + y + 9*x* + 9y = 19*x* + 11y
37. 3*x* + 4*x* + 4y + 7y = 7*x* + 11y
38. 10y + 4y + 2*x* + 10*x* + *x* + 3*x* + *x* + 4*x* = 21*x* + 14y
39. 8*x* + 7*x* + 8y + 10y + *x* + 8y = 16*x* + 26y
40. 2*x* + 2*x* + 3y + 5*x* = 9*x* + 3y
41. 3y + 5y + 7*x* + 3*x* + 4*x* + 8*x* + y + 7*x* = 29*x* + 9y
42. **Réduction d'e*x*pressions littérales**

1. 5*x* + 7*x* + 8*x* + 4y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. 4y + 9*x* + 6y + 2*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. 8y + 3*x* + 2y + 10*x* + 2y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. *x* + 4*x* + 5y + 4*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. 8*x* + *x* + 9*x* + 4y + 8*x* + 3*x* + 6y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. 8y + 10y + 3y + 6*x* + 7y + 3*x* + *x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
7. 6*x* + 6*x* + 8y + 9y + 3y + 7*x* + 8*x* + 7y =\_\_\_\_\_\_\_\_\_\_\_\_\_
8. 7*x* + 9*x* + 4y + 2*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
9. 10y + 9*x* + 9*x* + 9y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
10. 2*x* + 8y + 2*x* + 3*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
11. 4*x* + 9y + 10y + 6y + 3*x* + 6*x* + 9*x* + 2*x* =\_\_\_\_\_\_\_\_\_\_\_\_
12. 7y + 6y + y + 6y + 10*x* + 8*x* + *x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
13. 6y + 3y + 8y + 8y + 2*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
14. 8y + 7*x* + 8*x* + 8*x* + 7y + 8*x* + 9*x* + 8*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_
15. 10*x* + 2y + 10*x* + 4y + 4*x* + 8*x* + 8y + 6*x* =\_\_\_\_\_\_\_\_\_\_\_
16. y + 3*x* + *x* + 3y + 8y + 2*x* + 9y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
17. 9y + 5y + 2*x* + 9*x* + 4y + 7*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
18. 3*x* + 3*x* + 2y + 6*x* + 9y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
19. 10*x* + 2*x* + 3*x* + 8*x* + 7*x* + 8*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
20. *x* + 9y + 8y + 7y + 2*x* + 6y + 3*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
21. **Solutions**

1. 5*x* + 7*x* + 8*x* + 4y = 20*x* + 4y
2. 4y + 9*x* + 6y + 2*x* = 11*x* + 10y
3. 8y + 3*x* + 2y + 10*x* + 2y = 13*x* + 12y
4. *x* + 4*x* + 5y + 4*x* = 9*x* + 5y
5. 8*x* + *x* + 9*x* + 4y + 8*x* + 3*x* + 6y = 29*x* + 10y
6. 8y + 10y + 3y + 6*x* + 7y + 3*x* + *x* = 10*x* + 28y
7. 6*x* + 6*x* + 8y + 9y + 3y + 7*x* + 8*x* + 7y = 27*x* + 27y
8. 7*x* + 9*x* + 4y + 2*x* = 18*x* + 4y
9. 10y + 9*x* + 9*x* + 9y = 18*x* + 19y
10. 2*x* + 8y + 2*x* + 3*x* = 7*x* + 8y
11. 4*x* + 9y + 10y + 6y + 3*x* + 6*x* + 9*x* + 2*x* = 24*x* + 25y
12. 7y + 6y + y + 6y + 10*x* + 8*x* + *x* = 19*x* + 20y
13. 6y + 3y + 8y + 8y + 2*x* = 2*x* + 25y
14. 8y + 7*x* + 8*x* + 8*x* + 7y + 8*x* + 9*x* + 8*x* = 48*x* + 15y
15. 10*x* + 2y + 10*x* + 4y + 4*x* + 8*x* + 8y + 6*x* = 38*x* + 14y
16. y + 3*x* + *x* + 3y + 8y + 2*x* + 9y = 6*x* + 21y
17. 9y + 5y + 2*x* + 9*x* + 4y + 7*x* = 18*x* + 18y
18. 3*x* + 3*x* + 2y + 6*x* + 9y = 12*x* + 11y
19. 10*x* + 2*x* + 3*x* + 8*x* + 7*x* + 8*x* = 38*x*
20. *x* + 9y + 8y + 7y + 2*x* + 6y + 3*x* = 6*x* + 30y
21. **Réduction d'e*x*pressions littérales**

1. 2y + 8*x* + 6y + 4y + 5*x* + 8y + 4y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. 5*x* + 6*x* + y + 7y + 10y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. *x* + y + *x* + 7y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. y + 5y + 5y + 7y + 10*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. 10y + 5*x* + 9y + 3*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. *x* + *x* + 2*x* + 9*x* + *x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
7. 9y + 8y + 8y + y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
8. 10*x* + 8y + 3*x* + 4*x* + 6*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
9. 5y + 6y + 3y + y + 9*x* + 10*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
10. 6*x* + 4*x* + 5y + 7*x* + 7y + 2*x* + 10*x* + 4y =\_\_\_\_\_\_\_\_\_\_\_\_
11. 4*x* + 10*x* + 8*x* + 3*x* + 10y + 2y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
12. 8*x* + 3*x* + 9y + 2y + 10*x* + 5*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
13. 10*x* + y + 2*x* + 4*x* + 9*x* + 8*x* + 10y + y =\_\_\_\_\_\_\_\_\_\_\_\_\_
14. 8y + y + 4y + 5*x* + 6*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
15. 6*x* + 2y + 5y + 5y + 9y + 6y + 8*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
16. *x* + 10*x* + 10y + 10y + 7y + 9y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
17. 6*x* + 5y + 7*x* + 9*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
18. *x* + *x* + 2*x* + 5*x* + 6y + 2y + 7y + 2*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
19. 3*x* + 3y + 3*x* + *x* + 5y + 2y + 8y + 7y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_
20. 6y + y + 4*x* + 8*x* + 3y + 10y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
21. **Solutions**

1. 2y + 8*x* + 6y + 4y + 5*x* + 8y + 4y = 13*x* + 24y
2. 5*x* + 6*x* + y + 7y + 10y = 11*x* + 18y
3. *x* + y + *x* + 7y = 2*x* + 8y
4. y + 5y + 5y + 7y + 10*x* = 10*x* + 18y
5. 10y + 5*x* + 9y + 3*x* = 8*x* + 19y
6. *x* + *x* + 2*x* + 9*x* + *x* = 14*x*
7. 9y + 8y + 8y + y = 26y
8. 10*x* + 8y + 3*x* + 4*x* + 6*x* = 23*x* + 8y
9. 5y + 6y + 3y + y + 9*x* + 10*x* = 19*x* + 15y
10. 6*x* + 4*x* + 5y + 7*x* + 7y + 2*x* + 10*x* + 4y = 29*x* + 16y
11. 4*x* + 10*x* + 8*x* + 3*x* + 10y + 2y = 25*x* + 12y
12. 8*x* + 3*x* + 9y + 2y + 10*x* + 5*x* = 26*x* + 11y
13. 10*x* + y + 2*x* + 4*x* + 9*x* + 8*x* + 10y + y = 33*x* + 12y
14. 8y + y + 4y + 5*x* + 6*x* = 11*x* + 13y
15. 6*x* + 2y + 5y + 5y + 9y + 6y + 8*x* = 14*x* + 27y
16. *x* + 10*x* + 10y + 10y + 7y + 9y = 11*x* + 36y
17. 6*x* + 5y + 7*x* + 9*x* = 22*x* + 5y
18. *x* + *x* + 2*x* + 5*x* + 6y + 2y + 7y + 2*x* = 11*x* + 15y
19. 3*x* + 3y + 3*x* + *x* + 5y + 2y + 8y + 7y = 7*x* + 25y
20. 6y + y + 4*x* + 8*x* + 3y + 10y = 12*x* + 20y
21. **Réduction d'e*x*pressions littérales**

1. 2y + *x* + 7*x* + 2*x* + 2*x* + 6*x* + y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. y + 5y + 10y + 9*x* + 9y + 6*x* + 7*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. 9y + 4y + 2*x* + 4*x* + *x* + *x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. 7*x* + 5y + 9y + 7y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. 2y + 6y + 4y + 9y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. 2*x* + 10*x* + 5y + 9y + 3y + 2y + 10y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
7. 8y + 4*x* + 10y + 6*x* + 4y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
8. 4*x* + 4y + 3y + 4*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
9. 3*x* + 5*x* + 7*x* + 6*x* + 6y + 6*x* + y + 5y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_
10. 8*x* + 10*x* + 7y + 10*x* + 5*x* + 7y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
11. *x* + 9*x* + 2*x* + y + 6y + *x* + 9y + 4y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
12. 4*x* + 5y + 10*x* + 7y + 8*x* + 4y + 4y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
13. y + 9*x* + 2*x* + 4*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
14. 6*x* + 6y + 10*x* + 7*x* + 9*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
15. 8*x* + 8y + 5y + 5*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
16. 8*x* + 2*x* + 9y + *x* + 2y + 3y + 2y + 10y =\_\_\_\_\_\_\_\_\_\_\_\_\_
17. 2y + 9y + 4y + 8*x* + 6*x* + 5y + *x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
18. 4*x* + 10*x* + 3*x* + 6y + y + 2*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
19. *x* + 8y + 4*x* + 5*x* + y + 7*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
20. 4*x* + 3y + 9y + 3*x* + 2y + 6y + 3*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
21. **Solutions**

1. 2y + *x* + 7*x* + 2*x* + 2*x* + 6*x* + y = 18*x* + 3y
2. y + 5y + 10y + 9*x* + 9y + 6*x* + 7*x* = 22*x* + 25y
3. 9y + 4y + 2*x* + 4*x* + *x* + *x* = 8*x* + 13y
4. 7*x* + 5y + 9y + 7y = 7*x* + 21y
5. 2y + 6y + 4y + 9y = 21y
6. 2*x* + 10*x* + 5y + 9y + 3y + 2y + 10y = 12*x* + 29y
7. 8y + 4*x* + 10y + 6*x* + 4y = 10*x* + 22y
8. 4*x* + 4y + 3y + 4*x* = 8*x* + 7y
9. 3*x* + 5*x* + 7*x* + 6*x* + 6y + 6*x* + y + 5y = 27*x* + 12y
10. 8*x* + 10*x* + 7y + 10*x* + 5*x* + 7y = 33*x* + 14y
11. *x* + 9*x* + 2*x* + y + 6y + *x* + 9y + 4y = 13*x* + 20y
12. 4*x* + 5y + 10*x* + 7y + 8*x* + 4y + 4y = 22*x* + 20y
13. y + 9*x* + 2*x* + 4*x* = 15*x* + y
14. 6*x* + 6y + 10*x* + 7*x* + 9*x* = 32*x* + 6y
15. 8*x* + 8y + 5y + 5*x* = 13*x* + 13y
16. 8*x* + 2*x* + 9y + *x* + 2y + 3y + 2y + 10y = 11*x* + 26y
17. 2y + 9y + 4y + 8*x* + 6*x* + 5y + *x* = 15*x* + 20y
18. 4*x* + 10*x* + 3*x* + 6y + y + 2*x* = 19*x* + 7y
19. *x* + 8y + 4*x* + 5*x* + y + 7*x* = 17*x* + 9y
20. 4*x* + 3y + 9y + 3*x* + 2y + 6y + 3*x* = 10*x* + 20y
21. **Réduction d'e*x*pressions littérales**

1. 3*x* + 9*x* + 4y + 6*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. y + 8y + 9y + 5*x* + 7y + 3y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. 2*x* + 5y + 5y + y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. 10*x* + 8*x* + *x* + 9*x* + *x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. 9y + 6y + 9y + 6y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. 2y + 4*x* + 10y + 5*x* + *x* + 2*x* + 3y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
7. 10*x* + 3y + y + *x* + 5*x* + 8*x* + 7y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
8. y + 4*x* + 3*x* + 3y + 8*x* + 3y + 3*x* + *x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
9. *x* + 3y + 10y + 8*x* + 10y + *x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
10. 9*x* + 10*x* + 8*x* + 9*x* + 6*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
11. 3y + 6*x* + 5y + 2*x* + *x* + *x* + 4y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
12. 2y + 2*x* + 10y + 6y + 2y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
13. 10y + 4*x* + 7y + 6y + 7y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
14. y + 10*x* + 6*x* + 8y + 10y + 9*x* + 3y + 7y =\_\_\_\_\_\_\_\_\_\_\_\_
15. 5*x* + 3*x* + 4y + 4y + 7y + y + 4*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
16. 5*x* + 4*x* + 8*x* + *x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
17. 3y + 9*x* + 3y + 3y + 2*x* + 7*x* + 4*x* + 10*x* =\_\_\_\_\_\_\_\_\_\_\_\_
18. 8*x* + 2*x* + 9*x* + 3*x* + 3*x* + 9*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
19. y + 9*x* + 10y + 3y + 2*x* + 5y + 6y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
20. 9*x* + 5y + y + 3y + 2y + 6y + 9y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
21. **Solutions**
22. 3*x* + 9*x* + 4y + 6*x* = 18*x* + 4y
23. y + 8y + 9y + 5*x* + 7y + 3y = 5*x* + 28y
24. 2*x* + 5y + 5y + y = 2*x* + 11y
25. 10*x* + 8*x* + *x* + 9*x* + *x* = 29*x*
26. 9y + 6y + 9y + 6y = 30y
27. 2y + 4*x* + 10y + 5*x* + *x* + 2*x* + 3y = 12*x* + 15y
28. 10*x* + 3y + y + *x* + 5*x* + 8*x* + 7y = 24*x* + 11y
29. y + 4*x* + 3*x* + 3y + 8*x* + 3y + 3*x* + *x* = 19*x* + 7y
30. *x* + 3y + 10y + 8*x* + 10y + *x* = 10*x* + 23y
31. 9*x* + 10*x* + 8*x* + 9*x* + 6*x* = 42*x*
32. 3y + 6*x* + 5y + 2*x* + *x* + *x* + 4y = 10*x* + 12y
33. 2y + 2*x* + 10y + 6y + 2y = 2*x* + 20y
34. 10y + 4*x* + 7y + 6y + 7y = 4*x* + 30y
35. y + 10*x* + 6*x* + 8y + 10y + 9*x* + 3y + 7y = 25*x* + 29y
36. 5*x* + 3*x* + 4y + 4y + 7y + y + 4*x* = 12*x* + 16y
37. 5*x* + 4*x* + 8*x* + *x* = 18*x*
38. 3y + 9*x* + 3y + 3y + 2*x* + 7*x* + 4*x* + 10*x* = 32*x* + 9y
39. 8*x* + 2*x* + 9*x* + 3*x* + 3*x* + 9*x* = 34*x*
40. y + 9*x* + 10y + 3y + 2*x* + 5y + 6y = 11*x* + 25y
41. 9*x* + 5y + y + 3y + 2y + 6y + 9y = 9*x* + 26y
42. **Réduction d'e*x*pressions littérales**

1. 6*x* + 3y + y + 3*x* + 4y + 4y + 3y + 7*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. 7y + 9y + 6y + 10*x* + 2y + 10*x* + 2*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. 2y + 2*x* + 3*x* + 9*x* + 4*x* + 4*x* + 2y + *x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. 3y + 6*x* + 2*x* + 6*x* + 7*x* + 3y + 5*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. 10y + 10y + 10*x* + 3y + 2*x* + 4*x* + 10y =\_\_\_\_\_\_\_\_\_\_\_\_\_
6. 10y + 8y + 8*x* + 2y + 6y + 3*x* + 6*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
7. 10y + 5*x* + 10*x* + 9y + 3*x* + 8*x* + 5*x* + 3*x* =\_\_\_\_\_\_\_\_\_\_\_
8. 6*x* + 6*x* + 5y + 4*x* + 6y + 5*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
9. 10y + 3*x* + 2y + 8y + 10y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
10. 3y + 3y + 10y + *x* + 5*x* + y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
11. 9y + 8*x* + 6y + 4*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
12. 3*x* + 10*x* + 4*x* + 2*x* + 8*x* + *x* + 2*x* + 2*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_
13. 9y + 4y + y + 2y + 4y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
14. 6*x* + 5*x* + 10*x* + 4y + *x* + 10y + 9y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
15. 6*x* + *x* + 7*x* + 2y + 4y + 10*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
16. 2*x* + 4y + 5*x* + 8*x* + 3*x* + 3y + 8y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
17. 7y + 2y + 4y + 3*x* + 9y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
18. 7y + 6*x* + 10*x* + 6y =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
19. 2y + 2*x* + 3*x* + 5y + 8y + 2y + 8*x* + 7*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_
20. 5y + 7y + 9*x* + 7y + 8y + 8*x* + 10*x* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
21. **Solutions**
22. 6*x* + 3y + y + 3*x* + 4y + 4y + 3y + 7*x* = 16*x* + 15y
23. 7y + 9y + 6y + 10*x* + 2y + 10*x* + 2*x* = 22*x* + 24y
24. 2y + 2*x* + 3*x* + 9*x* + 4*x* + 4*x* + 2y + *x* = 23*x* + 4y
25. 3y + 6*x* + 2*x* + 6*x* + 7*x* + 3y + 5*x* = 26*x* + 6y
26. 10y + 10y + 10*x* + 3y + 2*x* + 4*x* + 10y = 16*x* + 33y
27. 10y + 8y + 8*x* + 2y + 6y + 3*x* + 6*x* = 17*x* + 26y
28. 10y + 5*x* + 10*x* + 9y + 3*x* + 8*x* + 5*x* + 3*x* = 34*x* + 19y
29. 6*x* + 6*x* + 5y + 4*x* + 6y + 5*x* = 21*x* + 11y
30. 10y + 3*x* + 2y + 8y + 10y = 3*x* + 30y
31. 3y + 3y + 10y + *x* + 5*x* + y = 6*x* + 17y
32. 9y + 8*x* + 6y + 4*x* = 12*x* + 15y
33. 3*x* + 10*x* + 4*x* + 2*x* + 8*x* + *x* + 2*x* + 2*x* = 32*x*
34. 9y + 4y + y + 2y + 4y = 20y
35. 6*x* + 5*x* + 10*x* + 4y + *x* + 10y + 9y = 22*x* + 23y
36. 6*x* + *x* + 7*x* + 2y + 4y + 10*x* = 24*x* + 6y
37. 2*x* + 4y + 5*x* + 8*x* + 3*x* + 3y + 8y = 18*x* + 15y
38. 7y + 2y + 4y + 3*x* + 9y = 3*x* + 22y
39. 7y + 6*x* + 10*x* + 6y = 16*x* + 13y
40. 2y + 2*x* + 3*x* + 5y + 8y + 2y + 8*x* + 7*x* = 20*x* + 17y
41. 5y + 7y + 9*x* + 7y + 8y + 8*x* + 10*x* = 27*x* + 27y