

4.2

EXERCISES

Write each number in expanded form.

1. 73

2. 925

3. 3774

4. 12,398

5. four thousand, nine hundred twenty-four

6. fifty-two thousand, one hundred eighteen

7. fourteen million, two hundred six thousand, forty

8. two hundred twelve million, eleven thousand, nine hundred sixteen

Simplify each of the following expansions.

9. $(4 \times 10^1) + (2 \times 10^0)$ 10. $(3 \times 10^2) + (5 \times 10^1) + (0 \times 10^0)$
 11. $(6 \times 10^3) + (2 \times 10^2) + (0 \times 10^1) + (9 \times 10^0)$ 12. $(5 \times 10^5) + (0 \times 10^4) + (3 \times 10^3) + (5 \times 10^2) + (6 \times 10^1) + (8 \times 10^0)$
 13. $(7 \times 10^7) + (4 \times 10^5) + (1 \times 10^3) + (9 \times 10^0)$ 14. $(3 \times 10^8) + (8 \times 10^7) + (2 \times 10^2) + (3 \times 10^0)$

In each of the following, add in expanded notation.

15. $54 + 35$ 16. $782 + 413$

In each of the following, subtract in expanded notation.

17. $85 - 53$ 18. $784 - 523$

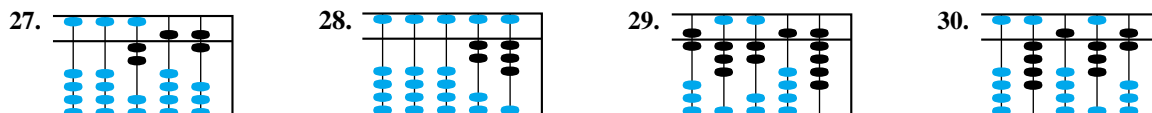
Perform each addition using expanded notation.

19. $75 + 34$ 20. $537 + 278$ 21. $434 + 299$ 22. $6755 + 4827$

Perform each subtraction using expanded notation.

23. $54 - 48$ 24. $364 - 59$ 25. $645 - 439$ 26. $816 - 335$

Identify the number represented on each abacus.



Sketch an abacus to show each number.

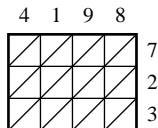
31. 38 32. 183 33. 2547 34. 70,163

Use the lattice method to find each product.

35. 65×29 36. 32×741 37. 525×73 38. 912×483

Refer to Example 10 where Napier's rods were used to find the product of 723 and 4198. Then complete Exercises 39 and 40.

39. Find the product of 723 and 4198 by completing the lattice process shown here.



40. Explain how Napier's rods could have been used in Example 10 to set up one complete lattice product rather than adding three individual (shifted) lattice products. Illustrate with a sketch.

Make use of Napier's rods (Figure 2) to find each product.

41. 8×62 42. 32×73 43. 26×8354 44. 526×4863

Refer to the chapter introduction, and perform each of the following subtractions using the nines complement method.

45. $283 - 41$ 46. $536 - 425$ 47. $50,000 - 199$ 48. $40,002 - 4846$

Use the Russian peasant method to find each product.

49. 5×92 50. 41×53 51. 62×529 52. 145×63