1. yes; ends in 0
2. no; does not end in $0,2,4,6$, or 8
3. yes; ends in 5
4. yes; ends in 0
5. yes; ends in 0
6. no; does not end in $0,2,4,6$, or 8
7. yes; ends in 8
8. no; does not end in 0
9. no; sum of digits is not divisible by 9
10. yes; sum of digits is divisible by 3
11. yes; sum of digits is divisible by 9
12. yes; sum of digits is divisible by 3
13. no; sum of digits is not divisible by 9
14. yes; sum of digits is divisible by 9
15. yes; sum of digits is divisible by 3
16. yes; sum of digits is divisible by 3
17. 1, 2, 4
18. 1, 23
19. 1 row of $32 ; 2$ rows of $16 ; 4$ rows of 8
20. $3 ; 1+1+1=3$; 3 is divisible by 3 .
21. none
22. 2, 3, 9 ; the number ends in 8 ; $2+8+8=18$; 18 is divisible by 3 and 9 .
23. 2, 3, 5,10 ; the number ends in $0 ; 3+0+0=3$; 3 is divisible by 3.
24. 2; the number ends in 2.
25. 3,$9 ; 8+9+1=18 ; 18$ is divisible by 3 and 9 .
26. 5; the number ends in 5.
27. 2; the number ends in 4.
28. a. 66 and 4,710
b. 66 and 4,710
c. An integer is divisible by 6 if it is an even number and the sum of its digits is divisible by 3.
29. 1-25, 5-5
30. 1-32,2•16, $4 \cdot 8$
31. 1-37
32. 1-53
33. $1 \cdot 72,2 \cdot 36,3 \cdot 24,4 \cdot 18,6 \cdot 12,8 \cdot 9$
34. 7
35. 2
42.5
36. Explanations may vary. Sample: Yes; a number divisible by 9 has 3 as a factor.
37. a. 2 plates of 21 cookies, 3 plates of 14 cookies, 6 plates of 7 cookies
b. 2 plates of 28 cookies, 4 plates of 14 cookies, 7 plates of 8 cookies, 8 plates of 7 cookies
c. 2 plates of 30 cookies, 3 plates of 20 cookies, 4 plates of 15 cookies, 5 plates of 12 cookies, 6 plates of 10 cookies
d. 2 plates of 72 cookies, 3 plates of 48 cookies, 4 plates of 36 cookies, 6 plates of 24 cookies, 8 plates of 18 cookies, 9 plates of 16 cookies, 12 plates of 12 cookies, 16 plates of 9 cookies, 18 plates of 8 cookies
38. a.

| Number | Last two <br> digits | Are last two digits <br> divisible by 4? | Is the number <br> divisible by 4? |
| :---: | :---: | :---: | :---: |
| 136 | 36 | Yes | Yes |
| 1,268 | 68 | Yes | Yes |
| 314 | 14 | No | No |
| 1,078 | $\mathbf{7 8}$ | No | No |
| 696 | $\mathbf{9 6}$ | Yes | Yes |

b. An integer is divisible by 4 if its last 2 digits are divisible by 4.
46. Answers may vary. Sample: 25, 35, 45
47. Answers may vary. Sample: 21, 24, 33
48. Answers may vary. Sample: 30, 60, 120
49. Answers may vary. Sample: a+1 is not divisible by 2. Dividing by 2 will leave a remainder of 1 .

