

CHAPTER 9, TEST A

1. 3 2. 6 3. 4 4. 6 5. 10
6. 2 7. 0 8. 3 9. 3
10. (a) $n = 2 + 3k$, k any integer (b) $n = 2 + 5k$, k any integer
11. (a) $n = 3 + 7k$, k any integer (b) $n = 1 + 3k$, k any integer
12. No. The element # appears on the table but is not an element of S.
13. Yes. The table is symmetric to the diagonal from upper left to lower right.
14. @ 15. % 16. @ 17. #
18. Yes. $aL(bSc) = aLc$ and $(aLb)S(aLc) = aLc$. Thus, $aL(bSc) = (aLb)S(aLc)$.
19. Yes. $aS(bLc) = bLc$ and $(aSb)L(aSc) = bLc$. Thus, $aS(bLc) = (aSb)L(aSc)$.
20. (a) $(\% * @) \# \% = @ \# \% = \%$ (b) $(\% \# @) * (\% * @) = \% * @ = @$
21. Yes. 22. No. % has no inverse. 23. Yes.
24. (ii) and (iii) 25. Play Row 1. Value = 2
26. Play Row 1 three-fourths of the time and Row 2 one-fourth of the time.
Payoff value is $1\frac{1}{4}$.
27. $x = -1, y = 4$ 28. $AB = \begin{vmatrix} -7 & 0 \\ -2 & 1 \end{vmatrix}$ $BA = \begin{vmatrix} 1 & 0 \\ 6 & -7 \end{vmatrix}$
29. $AD = [120 \ 370 \ 210]$ So 120 frames, 370 wheels, and 210 chains are needed.
30. $DK = \begin{vmatrix} 7 \\ 11 \\ 10 \end{vmatrix}$ so the total cost of parts for the Type I is \$7, for the Type II is \$11 and for the Type III is \$10.
31. $\begin{vmatrix} 5 & 7 & -5 \\ -4 & 2 & 3 \\ -7 & -3 & 8 \end{vmatrix}$ 32. $\begin{vmatrix} 2 & 2 & -2 \\ -2 & 0 & 1 \\ -3 & -2 & 3 \end{vmatrix}$ 33. $\begin{vmatrix} 6 & 8 & -8 \\ & -7 & -6 & 7 \\ -11 & -12 & 13 \end{vmatrix}$
34. $\begin{vmatrix} 3 & 4 & 2 \\ -2 & 0 & 4 \end{vmatrix}$ 35. $x = 2, y = 1, z = -1$

$$AB = \begin{vmatrix} 6 & 7 & -1 \\ 7 & 7 & -3 \end{vmatrix} \quad BA = \begin{vmatrix} 2 & 10 \\ 3 & 11 \end{vmatrix} \begin{vmatrix} 0 \\ -1 \end{vmatrix}$$

36. 15 fives, 10 tens and 15 twenties. 37. $x = -5, y = 2, z = 3$
38. Let $z = 3k$, where k is any real number. Then solve the first two equations to get $y = 3 - k$ and $x = 2 - 7k$. Thus, the solution is $x = 2 - 7k, y = 3 - k, z = 3k$, k any real number.
39. The system has no solution.

CHAPTER 9, TEST B

1. (c) 2. (e) 3. (b) 4. (d) 5. (a) 6. (b)

7. (c) 8. (d) 9. (d) 10. (a) 11. (e) 12. (d)

13. (e) 14. (a) 15. (d) 16. (c) 17. (c) 18. (b)

19. (c) 20. (a) 21. (e) 22. (e) 23. (c) 24. (d)

25. (c) 26. (c) 27. (b) 28. (d) 29. (b) 30. (b)

31. (c) 32. (a) 33. (b) 34. (b) 35. (c) 36. (c)

37. (e)