

Answers for 3.5

For use with pages 190–193

3.5 Skill Practice

1. dimensions
2. Compare the dimensions and the corresponding elements. If they are the same, the matrices are equal.
3. The corresponding entries were not added together to create a 2×1 matrix; $\begin{bmatrix} 13.1 \\ -1.2 \end{bmatrix}$.
4. $\begin{bmatrix} -3 & 12 \\ -7 & 11 \end{bmatrix}$ 5. $\begin{bmatrix} -2 & -5 \\ 2 & 1 \end{bmatrix}$
6. Not possible; the matrices do not have the same dimensions.
7. $\begin{bmatrix} 3.6 & 4.7 \\ 6.2 & 7.5 \\ 14.3 & -1.2 \end{bmatrix}$
8. Not possible; the matrices are not the same dimension.
9. $\begin{bmatrix} -2 & -5 \\ 14 & -1 \\ -10 & 6 \end{bmatrix}$ 10. $\begin{bmatrix} -2 & 8 \\ 6 & -12 \end{bmatrix}$
11. $\begin{bmatrix} -6 & 8 & 15 \\ -12 & -21 & 9 \end{bmatrix}$
12. $\begin{bmatrix} -8 & 12 & 8 \\ \frac{5}{2} & -22 & -7 \end{bmatrix}$

13. $\begin{bmatrix} -3 & 5.1 & 2.4 \\ 8.1 & 0 & -4.5 \end{bmatrix}$

14. $\begin{bmatrix} -1 & 4 & 6 \\ 10 & -\frac{1}{2} & 0 \\ -4 & 5 & 1 \end{bmatrix}$

15. $\begin{bmatrix} -13.2 & -6.82 & -9.9 \\ 2.2 & 0 & -5.5 \\ -12.1 & 3.96 & -14.08 \end{bmatrix}$

16. $\begin{bmatrix} 23 & -16 \\ -3 & -1 \end{bmatrix}$ 17. $\begin{bmatrix} 13 & -8 \\ -9 & 1 \end{bmatrix}$

18. $\begin{bmatrix} 2 & -4 \\ 18 & -4 \end{bmatrix}$ 19. $\begin{bmatrix} 12 & -8 \\ -4 & 0 \end{bmatrix}$

20. $\begin{bmatrix} 9 & -1.5 & 5.2 \\ -6.7 & 1.5 & 3.3 \end{bmatrix}$

21. $\begin{bmatrix} 23.4 & -1.5 & -5.6 \\ -2.5 & -2.3 & 9.9 \end{bmatrix}$

22. $\begin{bmatrix} 3.6 & 3 & -26.6 \\ 19.7 & -8.7 & 3.3 \end{bmatrix}$

23. $\begin{bmatrix} -6.3 & -0.75 & 10.7 \\ -6.5 & 3.6 & -3.3 \end{bmatrix}$

24. $x = -6, y = -2$

25. $x = \frac{19}{2}, y = 4$

26. $x = \frac{5}{2}, y = 1$

Answers for 3.5 *continued*

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27. $x = -2, y = -16$

28. C

29. *Sample answer:*

$$A = \begin{bmatrix} 5.5 & -3 \\ -8 & 7 \end{bmatrix}, B = \begin{bmatrix} 2 & -2 \\ -5 & 4 \end{bmatrix}$$

30. a. $\begin{bmatrix} 12 & -8 \\ -7 & 8 \end{bmatrix}$ b. $\begin{bmatrix} 10 & 9 \\ 4 & 3 \end{bmatrix}$

c. $\begin{bmatrix} -11 & 10 \\ 4 & -3 \end{bmatrix}$ d. $\begin{bmatrix} -\frac{2}{3} & 3 \\ -\frac{17}{3} & 1 \end{bmatrix}$

3.5 Problem Solving

31. $\begin{bmatrix} 0 & 5 & 1 & -1 \\ -7 & -1 & -5 & -2 \\ 1 & -1 & 4 & 10 \end{bmatrix}$

32. Economy $\begin{bmatrix} 32 & 40 \\ 24 & 34 \\ 18 & 25 \\ 19 & 22 \end{bmatrix}$, $\begin{bmatrix} 35 & 43 \\ 26 & 37 \\ 19 & 27 \\ 21 & 24 \end{bmatrix}$

33. a. $M = \begin{matrix} \text{Model A} & \begin{bmatrix} 31 & 22 \\ 42 & 25 \\ 18 & 11 \end{bmatrix} \end{matrix}$

$J = \begin{matrix} \text{Model A} & \begin{bmatrix} 25 & 38 \\ 36 & 32 \\ 12 & 15 \end{bmatrix} \end{matrix}$

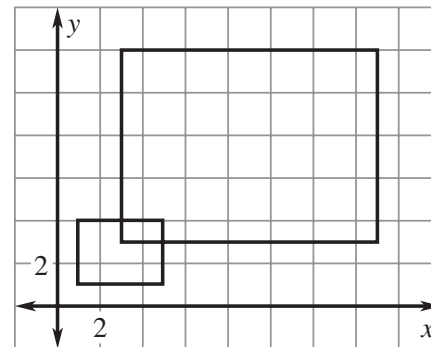
b. $\begin{bmatrix} 56 & 60 \\ 78 & 57 \\ 30 & 26 \end{bmatrix};$

The sum represents the total sales for May and June.

c. $\begin{bmatrix} 28 & 30 \\ 39 & 28.5 \\ 15 & 13 \end{bmatrix}$

34. No; $A + B$ is the total number of athletes and team sizes for each sport for 2000 - 2002. The team size for 2000 - 2002 is not correct because it is the sum of two averages and not an average.

35. $\begin{bmatrix} 1 & 1 & 5 & 5 \\ 1 & 4 & 1 & 4 \end{bmatrix}; \begin{bmatrix} 3 & 3 & 15 & 15 \\ 3 & 12 & 3 & 12 \end{bmatrix}$



The rectangles are similar to each other and the $3A$ matrix is a dilation of the A matrix.

Answers for 3.5 *continued*

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3.5 Mixed Review

36. -3 **37.** -1 **38.** -56

39. 9 **40.** 45 **41.** 24

42. $y = |x| + 1$

43. $y = -\frac{3}{2}|x - 1| + 1$

44. $y = 3|x - 3| - 1$

45. not a solution; solution

46. not a solution; not a solution

47. not a solution; solution

48. solution; not a solution