

Lesson Check

1. $\langle 5, 2 \rangle$
2. $\langle 9, -11 \rangle$
3. $\langle -1, -12 \rangle$
4. $\langle 0, -15 \rangle$
5. The magnitudes of vectors **a**, **b**, and **c** are the same. Each has magnitude 5.
6. Although the x -component of $\langle 8, 3 \rangle$ is 4 times the x -component of $\langle 2, 1 \rangle$, the y -component and the magnitude of $\langle 8, 3 \rangle$ are not 4 times those of $\langle 2, 1 \rangle$. $3 \neq 4 \times 1$ and $\sqrt{73} \neq 4 \times \sqrt{5}$.

Practice and Problem-Solving Exercises

7. $\langle 4, 1 \rangle$
8. $\langle -3, 5 \rangle$
9. $\langle 4, -2 \rangle$
10. $\langle 6, -2 \rangle$
11. $\langle 0, 2 \rangle$
12. $\langle -5, 0 \rangle$
13. $\langle -1, 5 \rangle$
14. $\langle 4, -3 \rangle$
15. $\langle 2, 0 \rangle$
16. $\langle 11, 4 \rangle$
17. $\langle 3, 0 \rangle$
18. $\langle 5, 4 \rangle$
19. $\langle 3, -4 \rangle$
20. $\langle 1, 7 \rangle$
21. $\langle 4, -1 \rangle$
22. $\langle -3, -1 \rangle$
23. $\langle -3, 8 \rangle$
24. $\langle -2, 6 \rangle$
25. $\langle -8, 20 \rangle$
26. $\langle 3, 6 \rangle$
27. $\langle -6, -12 \rangle$
28. normal
29. not normal
30. not normal
31. normal