

$$1. \langle 7, 4 \rangle; 8.1$$

$$3. \langle -7, -3 \rangle; 7.6$$

$$11. \langle -21, 13 \rangle$$

$$13. \langle -55, -13 \rangle$$

$$20. \left\langle \frac{-2\sqrt{53}}{53}, \frac{7\sqrt{53}}{53} \right\rangle$$

$$22. \left\langle \frac{-8\sqrt{89}}{89}, \frac{-5\sqrt{89}}{89} \right\rangle$$

$$27. \left\langle \frac{3}{5}, \frac{-4}{5} \right\rangle$$

$$28. i - 6j$$

$$33. 13i + 11j$$

$$36. -3.1i + 8.2j$$

$$37. a. \approx 5.8 \text{ mph}$$

$$b. \approx 59^\circ$$

$$38. \langle 6, 6\sqrt{3} \rangle$$

$$40. \langle -3, -3\sqrt{3} \rangle$$

$$46. 346.0^\circ$$

$$51. 290.6^\circ$$

$$53. a. \approx 674.3 \text{ mph}$$

$$52. \approx 520.8 \text{ N}; \approx 153.4$$

$$b. \approx S 86^\circ E$$