**8-2 Practice**

***Vectors in the Coordinate Plane***

**Find the component form and magnitude of with the given initial and terminal points.**

**1.** *A*(2, 4), *B*(–1, 3) **2.** *A*(4, –2), *B*(5, –5) **3.** *A*(–3, –6), *B*(8, –1)

**Find each of the following for v = 〈2, –1〉 and w = 〈**–**3, 5〉 .**

**4.** 3**v 5. w** – 2**v**

**6.** 4**v** + 3**w 7.** 5**w** – 3**v**

**Find a unit vector u with the same direction as v.**

**8. v** = 〈–3, 6〉 **9. v** = 〈–8, –2〉

**Let be the vector with the given initial and terminal points. Write as a linear combination of the   
vectors i and j.**

**10.** *D*(4, –5), *E*(6, –7) **11.** *D*(–4, 3), *E*(5, –2)

**12.** *D*(4, 6), *E*(–5, –2) **13.** *D*(2, 1), *E*(3, 7)

**Find the component form of v with the given magnitude and direction angle.**

**14.** |**v**| = 12, *θ* = 42° **15.** |**v**| = 8, *θ* = 132°

**16. GARDENING** Anne and Henry are lifting a stone statue and moving it to a new location in their garden. Anne is pushing the statue with a force of 120 newtons at a 60° angle with the horizontal while Henry is pulling the statue with a force of 180 newtons at a 40° angle with the horizontal. What is the magnitude of the combined force they exert on the statue?

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