Lesson 12.5 Practice: Vectors and the Dot Product

School Launch · Algebra II · Unit 12: Matrices and Vectors · Worksheet A

Calculator for decimals

Name _____ Date _____ Score _____ / 10

Show your work under each problem, one step per line, and check your answer. Word problems: name the unknown, write the equation, solve, and answer in a sentence with units.

1. $\mathbf{u} = \langle 5, 6\rangle$, $\mathbf{v} = \langle 5, 4\rangle$. Find $\mathbf{u} + \mathbf{v}$ and $\mathbf{u} \cdot \mathbf{v}$. EASY

2. $\mathbf{u} = \langle 1, -6\rangle$, $\mathbf{v} = \langle 4, -3\rangle$. Find $\mathbf{u} + \mathbf{v}$ and $\mathbf{u} \cdot \mathbf{v}$. EASY

3. $\mathbf{u} = \langle 1, -6\rangle$, $\mathbf{v} = \langle 2, 5\rangle$. Find $\mathbf{u} + \mathbf{v}$ and $\mathbf{u} \cdot \mathbf{v}$. EASY

4. Find the angle between $\langle 1, 4\rangle$ and $\langle -3, -3\rangle$ (nearest tenth of a degree). MEDIUM

5. Find the angle between $\langle 6, -2\rangle$ and $\langle 1, -2\rangle$ (nearest tenth of a degree). MEDIUM

6. Find the angle between $\langle 2, -2\rangle$ and $\langle 1, 5\rangle$ (nearest tenth of a degree). MEDIUM

7. Find the angle between $\langle 6, -1\rangle$ and $\langle 3, 6\rangle$ (nearest tenth of a degree). MEDIUM

8. Find the angle between $\langle 3, 5\rangle$ and $\langle 3, 3\rangle$ (nearest tenth of a degree). HARD

9. Find the angle between $\langle 4, -6\rangle$ and $\langle 2, -3\rangle$ (nearest tenth of a degree). HARD

10. Find the angle between $\langle 5, -5\rangle$ and $\langle 4, 6\rangle$ (nearest tenth of a degree). HARD