

Vector Test Study Guide

Date _____ Period _____

Find the direction angle for each vector.

1) $\mathbf{k} = \langle -21, 5 \rangle$

2) \overrightarrow{CD} where $C = (-2, 10)$ $D = (4, -2)$

Find the component form of the resultant vector.

3) $\mathbf{u} = \langle 3, -9 \rangle$
 $\mathbf{v} = \langle -1, -1 \rangle$
Find: $\mathbf{u} - \mathbf{v}$

4) $\mathbf{u} = \langle -4, -6 \rangle$
 $\mathbf{g} = \langle -5, -12 \rangle$
Find: $\mathbf{u} + \mathbf{g}$

Find the magnitude for each vector.

5) $\mathbf{p} = \langle 18, 24 \rangle$

6) \overrightarrow{RS} where $R = (0, 7)$ $S = (10, -7)$

Find the component form of the resultant vector.

7) $\mathbf{u} = \langle -5, 0 \rangle$
 $\mathbf{v} = \langle 12, 2 \rangle$
Find: $-\mathbf{u} - 2\mathbf{v}$

8) $\mathbf{u} = \langle 6, -7 \rangle$
 $\mathbf{b} = \langle -6, -3 \rangle$
Find: $-5\mathbf{u} + 6\mathbf{b}$

Find the dot product of the given vectors.

9) $\mathbf{u} = \langle -9, 6 \rangle$
 $\mathbf{v} = \langle -6, -8 \rangle$

10) $\mathbf{u} = 9\mathbf{i} + 2\mathbf{j}$
 $\mathbf{v} = -4\mathbf{i} + \mathbf{j}$

State if the two vectors are parallel, orthogonal, or neither.

11) $\mathbf{u} = \langle -8, 8 \rangle$
 $\mathbf{v} = \langle 8, -8 \rangle$

12) $\mathbf{u} = \langle -4, -2 \rangle$
 $\mathbf{v} = \langle -10, 20 \rangle$

Find the magnitude and direction angle of the resultant of each pair of vectors.

13) $\mathbf{t} = \langle -10, 17 \rangle$ $\mathbf{u} = \langle 7, 3 \rangle$

14) $\mathbf{m} = \langle 4, 7 \rangle$ $\mathbf{n} = \langle -13, -10 \rangle$

Find the component form of the resultant vector.

15) $\mathbf{u} = \langle 8, -2 \rangle$

Unit vector in the direction of \mathbf{u}

16) $\mathbf{u} = \langle 7, 4 \rangle$

Unit vector in the direction of \mathbf{u}

Write the vector in component form. Then find the magnitude.

17) \overrightarrow{PQ} where $P = (9, -5, 6)$ $Q = (9, -2, 0)$

Find the magnitude of the vector.

18) $\mathbf{r} = -6\mathbf{i} + 7\mathbf{j} + 7\mathbf{k}$