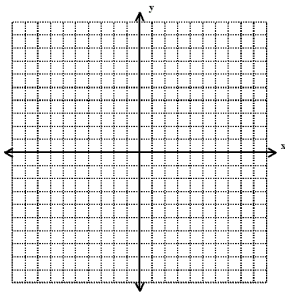
Pre—Calculus Name: _____

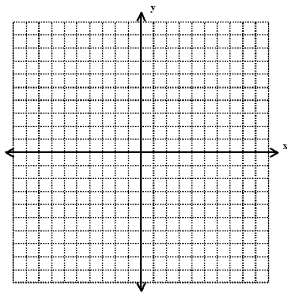
$ai + bj$ Form Practice

Write each of the following vectors in component form and then in $ai + bj$ form.

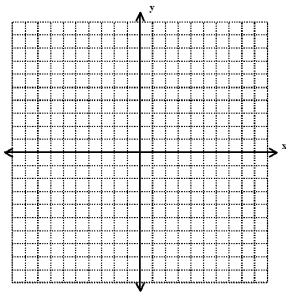
1) _____



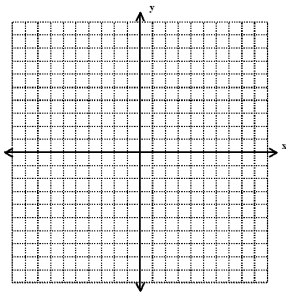
2) _____



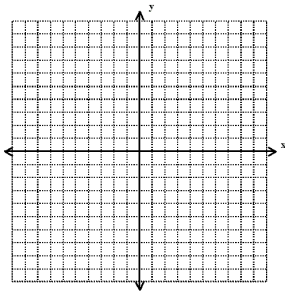
3) _____



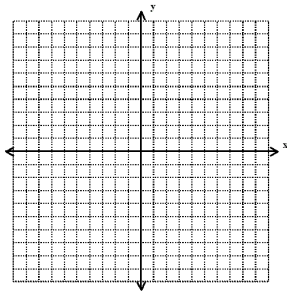
4) _____



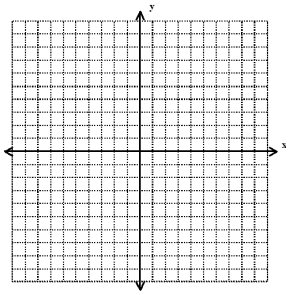
5) _____



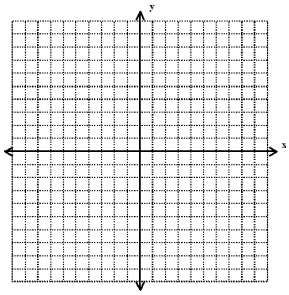
6) _____



7) _____

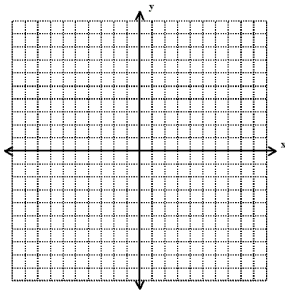


8) _____

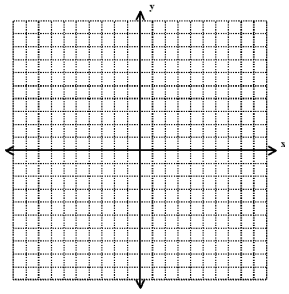


Draw each of the following vectors.

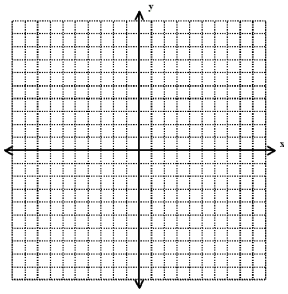
9) $-3i + 2j$



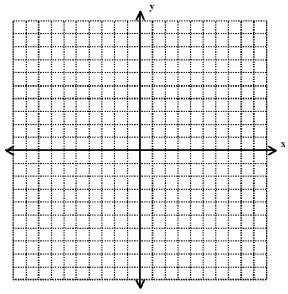
10) $4i + 6j$



11) $7i - 3j$



12) $-6i - 2j$



Pre—Calculus Name: _____

Dot Product and Angles Between Vectors

For each of the following find the dot product $v \cdot w$ and the angle between v and w.

1) $\mathrm{v} = \mathrm{i} - \mathrm{j}$ and $\mathrm{w} = \mathrm{i} + \mathrm{j}$

2) $\mathrm{v} = \mathrm{i} + \mathrm{j}$ and $\mathrm{w} = -\mathrm{i} + \mathrm{j}$

3) $\mathrm{v} = 2\mathrm{i} + \mathrm{j}$ and $\mathrm{w} = \mathrm{i} + 2\mathrm{j}$

4) $\mathrm{v} = 2\mathrm{i} + 2\mathrm{j}$ and $\mathrm{w} = \mathrm{i} + 2\mathrm{j}$

5) $\mathrm{v} = \sqrt{3}\mathrm{i} - \mathrm{j}$ and $\mathrm{w} = \mathrm{i} + \mathrm{j}$

6) $\mathrm{v} = \mathrm{i} + \sqrt{3}\mathrm{j}$ and $\mathrm{w} = \mathrm{i} - \mathrm{j}$

7) $\mathrm{v} = 3\mathrm{i} + 4\mathrm{j}$ and $\mathrm{w} = 4\mathrm{i} + 3\mathrm{j}$

8) $\mathrm{v} = 3\mathrm{i} - 4\mathrm{j}$ and $\mathrm{w} = 4\mathrm{i} - 3\mathrm{j}$

9) $\mathrm{v} = 4\mathrm{i}$ and $\mathrm{w} = \mathrm{j}$

10) $\mathrm{v} = \mathrm{i}$ and $\mathrm{w} = -3\mathrm{j}$