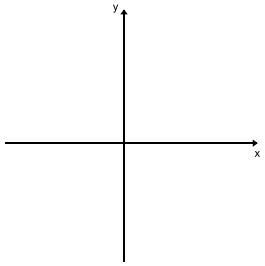
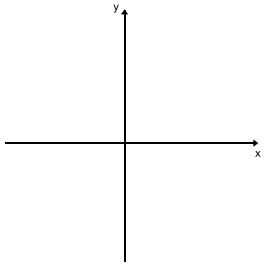
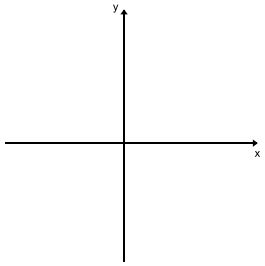
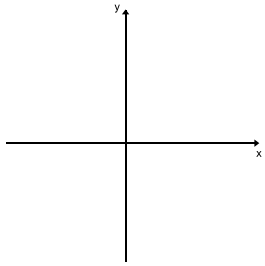
Name_____Describing location using a variety of methods

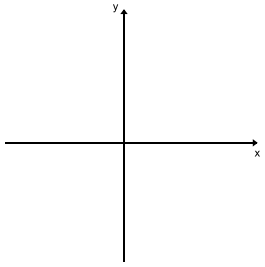
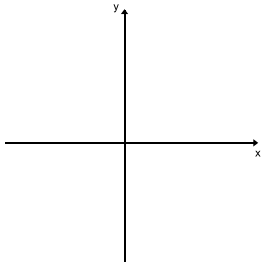
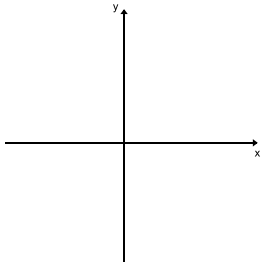
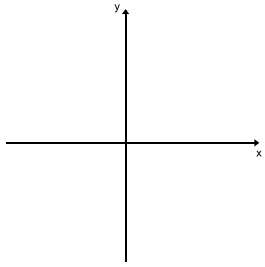
Any Directed Line Segment is called a VECTOR

The length of any directed line segment is called its MAGNITUDE

Bearing – this is a method of describing location based on angles that are formed using NORTH as initial position and angles being measured in a CLOCKWISE manner. (This notation will NOT mention N/S/E/W in its description)

Draw and label the direction vector that has a bearing of 12° Assume vector starts at the origin 	Draw and label the direction vector that has a bearing of 102° Assume vector starts at the origin 	Draw and label the direction vector that has a bearing of 202° Assume vector starts at the origin 	Draw and label the direction vector that has a bearing of 302° Assume vector starts at the origin 

Heading -this is a method of describing location based on angles that are formed using EAST as initial position and angles being measured in a COUNTERCLOCKWISE manner. This notation is the MATH notation. This notation will have THREE place values in the naming of the angle. (This notation will NOT mention N/S/E/W in its description)

Draw and label the direction vector that has a heading of 050° Assume vector starts at the origin 	Draw and label the direction vector that has a heading of 150° Assume vector starts at the origin 	Draw and label the direction vector that has a heading of 250° Assume vector starts at the origin 	Draw and label the direction vector that has a heading of 350° Assume vector starts at the origin 

If you are converting between two different notations/descriptions of direction vectors it is useful to determine the ACUTE angles formed within the quadrant in which the vector lies

A bearing of 12° means a heading of _____	A heading of 050° means a bearing of _____
A bearing of 102° means a heading of _____	A heading of 150° means a bearing of _____
A bearing of 202° means a heading of _____	A heading of 250° means a bearing of _____
A bearing of 302° means a heading of _____	A heading of 350° means a bearing of _____

If you are given N, S, E, W in the naming of the position of a vector, then you must pay attention to HOW they stated the direction.

Method 1: ANGLE direction REFERENCE position

ANGLE North of EAST (starts on EAST position heads COUNTERCLOCKWISE towards North)

ANGLE East of NORTH (starts on NORTH position heads CLOCKWISE towards East)

ANGLE South of EAST (starts on EAST position heads CLOCKWISE towards South)

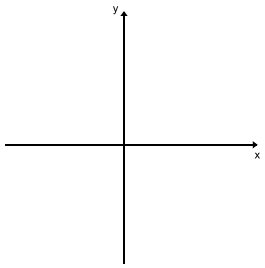
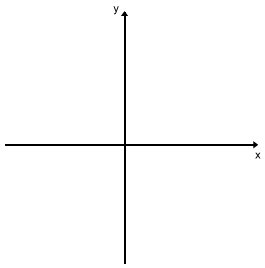
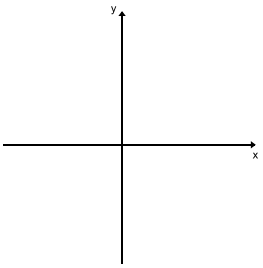
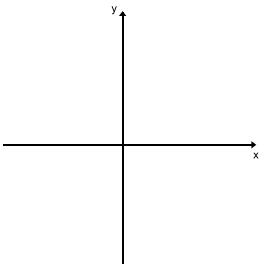
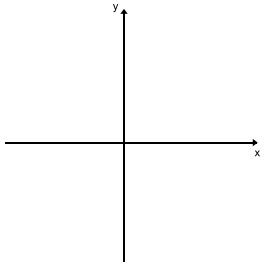
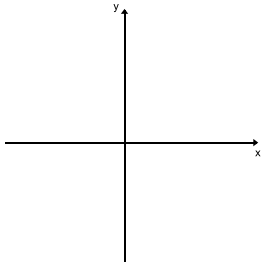
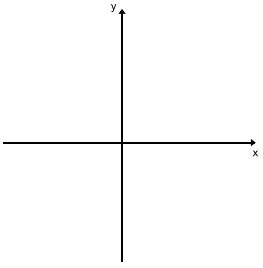
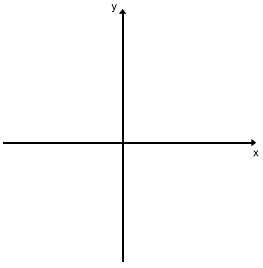
ANGLE East of SOUTH (starts on SOUTH position heads COUNTERCLOCKWISE towards East)

ANGLE North of WEST (starts on WEST position heads CLOCKWISE towards North)

ANGLE West of NORTH (starts on NORTH position heads COUNTERCLOCKWISE towards West)

ANGLE South of WEST (starts on EAST position heads COUNTERCLOCKWISE towards South)

ANGLE West of SOUTH (starts on SOUTH position heads CLOCKWISE towards West)

Draw and label the direction vector that 60° North of **East** Assume vector starts at the origin  This vector starts on the _____ position and travels in the direction of _____	Draw and label the direction vector that 80° East of **North** Assume vector starts at the origin  This vector starts on the _____ position and travels in the direction of _____	Draw and label the direction vector that 25° West of **North** Assume vector starts at the origin  This vector starts on the _____ position and travels in the direction of _____	Draw and label the direction vector that 65° North of **West** Assume vector starts at the origin  This vector starts on the _____ position and travels in the direction of _____
Draw and label the direction vector that 70° South of **East** Assume vector starts at the origin  This vector starts on the _____ position and travels in the direction of _____	Draw and label the direction vector that 18° East of **South** Assume vector starts at the origin  This vector starts on the _____ position and travels in the direction of _____	Draw and label the direction vector that 57° West of **South** Assume vector starts at the origin  This vector starts on the _____ position and travels in the direction of _____	Draw and label the direction vector that 17° South of **West** Assume vector starts at the origin  This vector starts on the _____ position and travels in the direction of _____

If you are given N, S, E, W in the naming of the position of a vector, then you must pay attention to HOW they stated the direction.

Method 2: REFERENCE position ANGLE direction

ANGLE North of EAST (starts on EAST position heads COUNTERCLOCKWISE towards North)

ANGLE East of NORTH (starts on NORTH position heads CLOCKWISE towards East)

ANGLE South of EAST (starts on EAST position heads CLOCKWISE towards South)

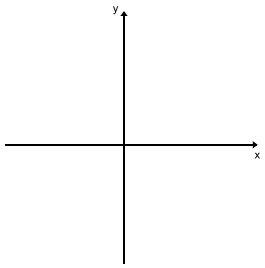
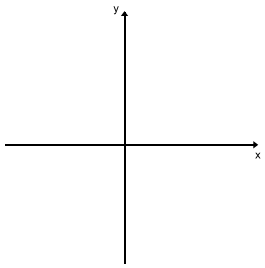
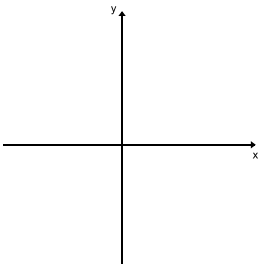
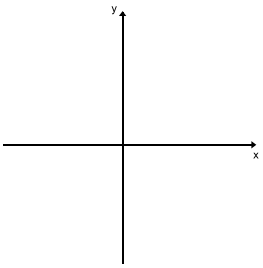
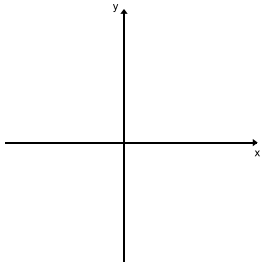
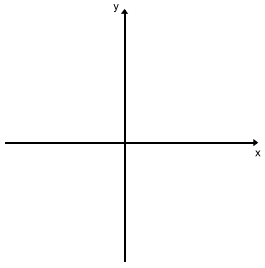
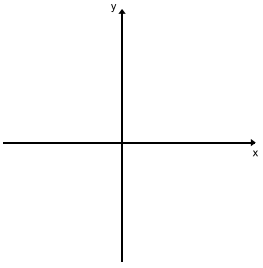
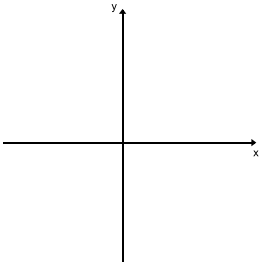
ANGLE East of SOUTH (starts on SOUTH position heads COUNTERCLOCKWISE towards East)

ANGLE North of WEST (starts on WEST position heads CLOCKWISE towards North)

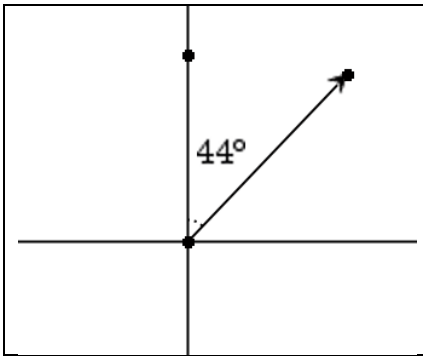
ANGLE West of NORTH (starts on NORTH position heads COUNTERCLOCKWISE towards West)

ANGLE South of WEST (starts on EAST position heads COUNTERCLOCKWISE towards South)

ANGLE West of SOUTH (starts on SOUTH position heads CLOCKWISE towards West)

Draw and label the direction vector that **North** 32° East Assume vector starts at the origin  This vector starts on the _____ position and travels in the direction of _____	Draw and label the direction vector that **East** 84° North Assume vector starts at the origin  This vector starts on the _____ position and travels in the direction of _____	Draw and label the direction vector that **North** 35° West Assume vector starts at the origin  This vector starts on the _____ position and travels in the direction of _____	Draw and label the direction vector that **West** 11° North Assume vector starts at the origin  This vector starts on the _____ position and travels in the direction of _____
Draw and label the direction vector that **East** 24° South Assume vector starts at the origin  This vector starts on the _____ position and travels in the direction of _____	Draw and label the direction vector that **South** 77° East Assume vector starts at the origin  This vector starts on the _____ position and travels in the direction of _____	Draw and label the direction vector that **West** 33° South Assume vector starts at the origin  This vector starts on the _____ position and travels in the direction of _____	Draw and label the direction vector that **South** 19° West Assume vector starts at the origin  This vector starts on the _____ position and travels in the direction of _____

Hint: knowing the acute angles in the quadrant formed by the vector is very helpful



This is a bearing of

_____

This is a heading of

_____

_____ North of **East**

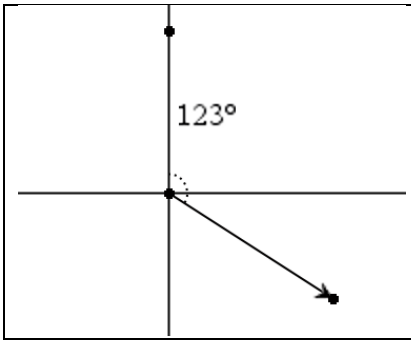
_____ East of **North**

_____ East of **South**

North _____ East

East _____ North

East ____ South



This is a bearing of

_____

This is a heading of

_____

_____ North of **East**

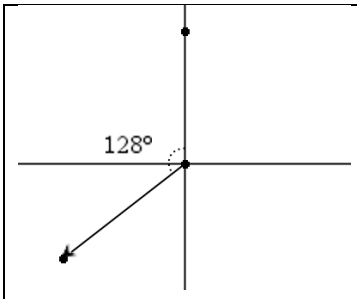
_____ East of **North**

_____ East of **South**

North _____ East

East _____ North

East ____ South



This is a bearing of

_____

This is a heading of

_____

_____ South of **West**

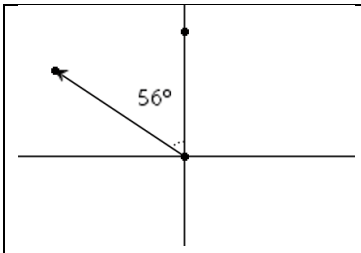
_____ West of **North**

_____ West of **South**

South _____ West

West _____ North

West _____ South



This is a bearing of

_____

This is a heading of

_____

_____ North of **West**

_____ West of **North**

_____ West of **South**

North _____ West

West _____ North

West _____ South

It is very important to realize that the answers in the heading and bearing column must be different (unless 45° or 225° present)

It is very important to realize that the answers in the last two columns are very different

There is a reason I underlined what I underlined