**Sketching Angles (in Degree) Notes**

Angles of rotation are formed in the coordinate plane between an **initial ray** & **terminal ray.**

The positive *x*-axis represents \_\_\_\_o and each quadrant will represent increments of 90o.

To sketch a positive angle measure rotate \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and for a

 negative angle measure rotate \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.



 $-$270o

90o

QI

QII

QII

QI

 $-$180o

0o /$-$360o

0o /360o

180o

QIV

QIII

 $-$90o

270o

QIV

QIII

**\*\*You will need to be able to quickly identify which quadrant the angle lies in\*\***

**Examples:** Sketch the angles & identify which quadrant the angle is located in.

1. 220° 2. 150° 3. -150°



4. 225° 5. -225° 6. 330°

**Reference Angles**

The **reference angle** is the acute angle formed by the terminal side of the angle and the \_\_\_\_\_\_\_\_\_\_\_\_\_\_.The reference angle is always \_\_\_\_\_\_\_\_\_\_\_\_.

**Examples**: Find the reference angle of the angles sketched below.

9.

8.

7.



12.

11.

10.

***Putting it together \*\* ultimate goal is to be able to do this without a sketch\*\****

Directions: *Determine what quadrant the angle is located, then find the reference angle.*

13. 300° 14. 150° 15. -135° 16. -200°

 Quad: Quad: Quad: Quad:

 R.A. : R.A. : R.A. : R.A. :