For each set of axes, name all the angles that are in standard position. Give the initial ray and terminal ray of each angle.
1.

2.


The measurement of an angle in standard position is listed. In which quadrant is the terminal ray?
3. $6.4 \pi$
4. $7.6 \pi$
5. $-5.2 \pi$

Below are various measurements of a circle's radius, an angle within the circle, or the arc subtended by the angle. SKETCH the approximate angle on the axes and find the missing value.
6. Radius is 7.7 and the length of an arc subtended by an angle is 6.2. Find the measure of the angle.

7. An angle is $1.63 \pi$ radians and the length of an arc subtended by the angle is 24.1 . What is the radius of the circle?

8. Radius is 6.21 and an angle is $0.34 \pi$ radians. Find the length of the arc subtended by the angle.

10. An angle is 4.58 radians and the length of an arc subtended by the angle is 29.7. What is the radius of the circle?

9. Radius is 3.6 and the length of an arc subtended by an angle is 16.88 . Find the measure of the angle.

11. Radius is 4.72 and an angle is 5.55 radians. Find the length of the arc subtended by the angle.


| 1. Angle $I G H$ with initial ray $\overrightarrow{G I}$ and terminal ray $\overrightarrow{G H}$ <br> Angle $I G F$ with initial ray $\overrightarrow{G I}$ and terminal ray $\overrightarrow{G F}$ | 2. Angle $Y X W$ with initial ray $\overrightarrow{X Y}$ <br> Angle $Y X Z$ with initial ray $\overrightarrow{X Y}$ and terminal ray $\overrightarrow{X W}$ <br> and ray $\overrightarrow{X Z}$ |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
| 3. Quadrant I | 4. Quadrant IV | 5. Quadrant II | 6. 0.805 | 7. 4.7063 |
| 8. 6.633 | 9. 4.6888 | 10. 6.4847 | 11. 26.196 |  |

