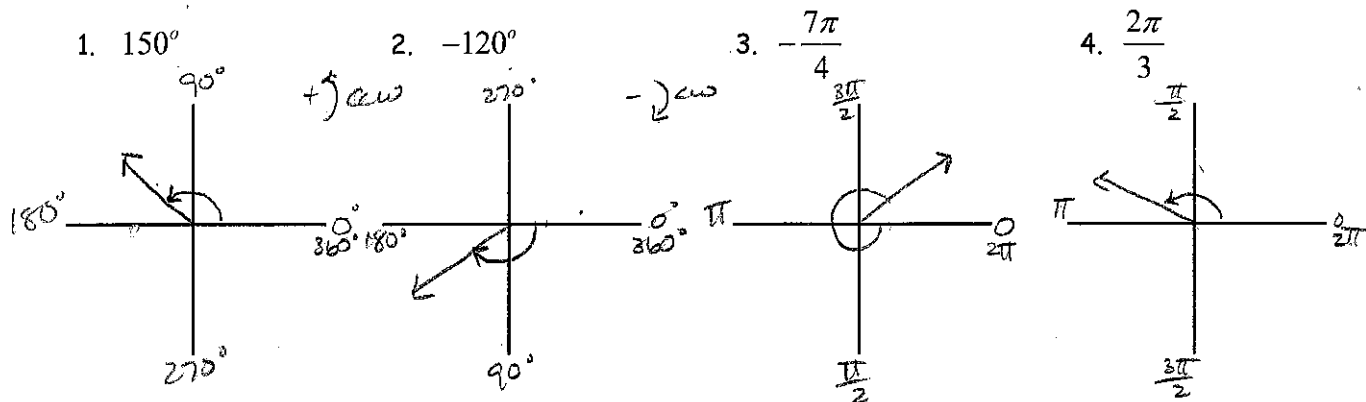


I. Sketch each of the following angles in standard position.



II. Determine the quadrant in which the terminal side of the angle lies.

5. 130° II 6. -336° I 7. 285° IV
 8. -260° II 9. $\frac{22\pi}{3}$ III 10. $\frac{7\pi}{5}$ III

$$\frac{22\pi}{3} - \frac{6\pi}{3} = \frac{16\pi}{3} - \frac{6\pi}{3} = \frac{10\pi}{3} - \frac{6\pi}{3} = \frac{4\pi}{3}$$

III. Express each of the following in radian measure. Leave your answer in terms of π . $R = D \cdot \frac{\pi}{180}$

11. 150° $\frac{5\pi}{6}$ 12. 315° $\frac{7\pi}{4}$ 13. -240° $-\frac{4\pi}{3}$

$$150 \cdot \frac{\pi}{180} = \frac{150\pi}{180}$$

$$315 \cdot \frac{\pi}{180} = \frac{315\pi}{180}$$

$$-240 \cdot \frac{\pi}{180} = \frac{-240\pi}{180}$$

IV. Express each of the following in degree measure. $D = R \cdot \frac{180}{\pi}$

14. $\frac{5\pi}{9}$ 100° 15. $-\frac{7\pi}{12}$ -105° 16. $\frac{11\pi}{5}$ 396°

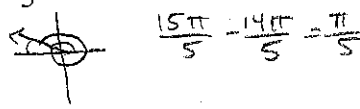
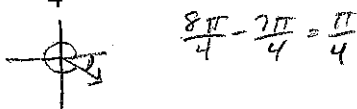
$$\frac{5\pi}{9} \cdot \frac{180}{\pi} = 100$$

$$-\frac{7\pi}{12} \cdot \frac{180}{\pi} = -105$$

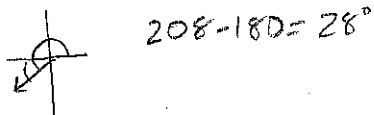
$$\frac{11\pi}{5} \cdot \frac{180}{\pi} =$$

V. Find the reference angle for each of the following.

17. $\frac{7\pi}{4}$ $\frac{\pi}{4}$ 18. $\frac{14\pi}{5}$ $\frac{\pi}{5}$



19. 208° 28°



20. -445° 85°

