## The Weekly Rigor

No. 252

"A mathematician is a machine for turning coffee into theorems."

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## **10 Problems Concerning Reference Angles (Part 1 of 2)**

(Part 1)

## PROBLEMS

Give the reference angle for each of the following angles. Show how you found your answer, including a picture of the angles in the x-y plane.

1. 150°	2. 225°
3. 300°	4. 120°
5. 210°	6. 135°
7. –120°	8. –330°
9. –315°	10. –225°

## ANSWERS

1. 30°	2. 45°
3. 60°	4. 60°
5. 30°	6. 45°
7. 60°	8. 30°
9. 45°	10. 45°



For an angle of  $150^{\circ}$  in standard position, the reference angle is  $180^{\circ} - 150^{\circ} = 30^{\circ}$ .

3. 300°



For an angle of  $300^{\circ}$  in standard position, the reference angle is  $360^{\circ} - 300^{\circ} = 60^{\circ}$ .

"Only l	ne who never	plays, never	loses."

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