Radians and degree conversion

6 questions | 18 marks

Equivalent correct methods earn the corresponding marks.

1. Convert 150° to radians. [3 marks]

$\frac{150\pi}{180} = \frac{5\pi}{6}$.

Answer: $\frac{5\pi}{6}$

2. Convert -60° to radians. [3 marks]

$-\frac{60\pi}{180} = -\frac{\pi}{3}$.

Answer: $-\frac{\pi}{3}$

3. Convert $\frac{11\pi}{12}$ radians to degrees. [3 marks]

$(\frac{11\pi}{12})(\frac{180}{\pi}) = 165.$

Answer: 165°.

4. Convert 2.4 radians to degrees to one decimal place. [3 marks]

$2.4(\frac{180}{\pi}) = 137.5098\ldots.$

Answer: 137.5°.

5. Give one positive and one negative angle coterminal with $\frac{\pi}{3}$. [3 marks]

Add or subtract 2π.

Answer: $\frac{7\pi}{3}$ and $-\frac{5\pi}{3}$

6. A calculator gives $\sin 30 \approx -0.988$. Explain if the intended angle was 30°. [3 marks]

$\sin(30 \text{ radians}) \approx -0.988$, but $\sin 30^\circ = 0.5$.

Answer: The calculator was in radian mode.