

3. Given the angle -52° , determine all of the coterminal angles on the domain $-720^\circ \leq \theta \leq 180^\circ$. (1 mark)
4. The pendulum of a grandfather clock has a length of 115cm. If it swings through an angle of 43° , what is the arc length of the pendulum? (2 marks)
5. The point $A\left(\frac{-4}{5}, \frac{3}{5}\right)$ lies at the intersection of the unit circle and the terminal arm of an angle θ in standard position.
- Draw a diagram to show θ in standard position and the point A on its terminal arm. (1mark)
 - Determine the values of the six trig ratios for θ . Answers should be in lowest terms. (3 marks)

6. Determine the exact value for: (1 mark each)

a) $\sin \frac{7\pi}{6}$

b) $\tan \frac{2\pi}{3}$

c) $\sec \frac{7\pi}{4}$

d) $\sin 210^\circ$

e) $\cot -240^\circ$

7. The angle θ is in the 3rd quadrant, and $\cos \theta = \frac{-2}{\sqrt{7}}$.
- Draw a diagram to show θ in standard position and a point P on its terminal arm. (1mark)
 - Determine possible coordinates for P. (1 mark)

8. Solve the equation $\sin \theta = \frac{1}{2}$, $0^\circ \leq \theta < 360^\circ$. (2 marks)

9. Solve each equation for θ algebraically, giving your answers as exact values where possible.
(2 marks each).

a) $3 \cos \theta + \sqrt{3} = \cos \theta, 0 \leq \theta < 2\pi$

b) $2 \tan^2 \theta + \tan \theta - 1 = 0, -\pi \leq \theta \leq \pi$

10. Solve algebraically for θ in radians. Write your general solution as exact values.
(3 marks)

$$\csc \theta + \sqrt{2} = 0$$