

10A Finding Acute Angles

1. Write $\sin 130^\circ$ as sine of an acute angle
2. Write $\cos (-120)^\circ$ as cos of an acute angle
3. Write $\tan 190$ as tan of an acute angle

10B Trigonometric Exact Values

1. Find the Exact Value of $\sin(120)$

2. Find the Exact Value of $\cos(135)$

3. Find the Exact Value of $\tan(150)$

10C Part 1 Exact Values Given a Trigonometric Ratio

1. Given that $\cos\theta$ is $-\frac{3}{5}$ and θ is reflex, find the value of $\sin\theta$

2. Given that $\sin\theta$ is $\frac{2}{5}$ and θ is obtuse, find the value of $\cos\theta$

10C Part 2 Trigonometric Identities

1. Simplify the following expression:

a) $\sin^2 3\theta + \cos^2 3\theta$

b) $5 - 5\sin^2 \theta$

c) $\frac{\sin 2\theta}{\sqrt{1 - \sin^2 2\theta}}$

2. Prove that:

$$\frac{\cos^4\theta - \sin^4\theta}{\cos^2\theta} \equiv 1 - \tan^2\theta$$

3. Given that $p = 3\cos\theta$ and that $q = 2\sin\theta$, show that $4p^2 + 9q^2 = 36$

10D Solving Simple Trigonometric Equations

1. Solve the equation
 $\sin\theta = 0.5$ in the interval $0 \leq \theta \leq 360$

2. Solve the equation
 $5\sin\theta = -2$ in the interval $0 \leq \theta \leq 360$

3. Solve the equation

$$\sin\theta = 2\cos\theta \text{ in the interval } 0 \leq \theta \leq 360$$

10E Adjusting Limits

1. Solve the equation

$$\cos 2\theta = -1 \text{ in the interval } 0 \leq \theta \leq 360$$

2. Solve the equation

$$\sin(2\theta - 35) = -1 \text{ in the interval } -180 \leq \theta \leq 180$$

10F Trigonometric Quadratics

1. Solve the equation

$$\sin^2\theta - 3\sin\theta + 2 = 0 \text{ in the interval } 0 \leq \theta \leq 360$$

2. Solve the equation

$$2\cos^2\theta - \cos\theta - 1 = 0 \text{ in the interval } 0 \leq \theta \leq 360$$

3. Solve the equation

$$\sin^2(\theta - 30) = \frac{1}{2} \text{ in the interval } 0 \leq \theta \leq 360$$

4. Solve the equation

$$2\cos^2 x + 9\sin x = 3\sin^2 x \text{ in the interval } -180 \leq \theta \leq 180$$