

## Lesson 6.4: Solving Trigonometric Equations Using Identities

### Review:

Solve  $2\cos^2 x - \cos x = 0$  where  $0 \leq x < 2\pi$

### Example:

Solve  $\cos 2x + 1 - \cos x = 0$  where  $0 \leq x < 2\pi$  .



## Lesson 6.4 Solving Trigonometric Equations using Identities

Solve the following:

(i)  $\cos^2 x = \cot x \sin x$  where  $0^\circ \leq x < 360^\circ$

Check  
Restrictions

(ii)  $2 \sin x = 7 - 3 \csc x$  where  $0 \leq x < 2\pi$

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## Lesson 6.4 Solving Trigonometric Equations using Identities

(iii)  $\cot x \cos x \sin x - 1 = 0$  where  $0^\circ \leq x < 360^\circ$

(iv)  $\sin 2x = \sqrt{3} \cos x$  general solution



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(v)  $2\cos^2 x - \sin x - 1 = 0$  where  $0^\circ \leq x < 360^\circ$

(vi)  $\sec^2 x = 3 \tan x - 1$  general solution

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## Lesson 6.4 Solving Trigonometric Equations using Identities

$$(vii) \sin 3x \cos x - \cos 3x \sin x = -\frac{\sqrt{3}}{2} \quad \text{where } 0 \leq x \leq 2\pi$$



Assign p.320-321 #1abc, 2bcd, 3bc, 8, 9, 11,14,15, 16