Solving Trigonometric Equations

Learning Goal: By the end of today, I will be able to solve equations using trigonometric ratios (sin, cos, tan) and the CAST Rule for all angles that satisfy the equation.

Note: $(\sin\theta)^2 = \sin^2\theta$ are equivalent.

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Solve

$3a + 1 = 13$

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Solve $0 \le \theta \le 360^o$

$3\tan\theta + 1 = 13$

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Solve

$(3a+2)(5a-3) = 0$

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Solve $0 \le \theta \le 360^o$

$(3\sin\theta + 2)(5\sin\theta - 3) = 0$

Note: solutions may involve multiple answers.

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Solve

$6a^2 - 12a = 0$

Note: solutions may involve multiple answers.

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Solve $0 \le \theta \le 360^o$

$6\tan^2\theta - 12\tan\theta = 0$

Note: solutions may involve multiple answers.

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Solve

$2a^2 - 5a + 3 = 0$

Note: solutions may involve multiple answers.

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Solve $0 \le \theta \le 360^o$

$2\sin^2\theta - 5\sin\theta + 3 = 0$

Note: solutions may involve multiple answers.

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Handout

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