

Algebra II and Trigonometry Honors Final Packet Review Part 2

Lesson 161 | Trigonometry | Rational expressions and graphs • Trigonometric equations • Sine and cosine graphs

<https://www.youtube.com/watch?v=lqrLkbOYbpl>

Related review: exact coverage needs teacher confirmation.

Name: _____ Date: _____ Show your reasoning.

01

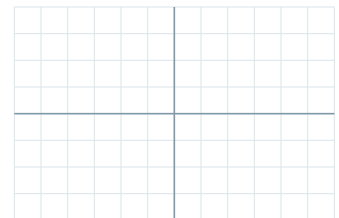
Simplify $(x^2 + 3x - 88)/(x - 8)$ and identify the excluded input and hole.

02

Solve $13\sin(7x) - 13/2 = 0$ for $0 \leq x < 2\pi$. Give an exact formula listing all roots.

03

Analyze and sketch one cycle of $y = 12\sin(6(x - 0)) + 2$. Give amplitude, period, phase shift, midline, and five key points.



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04

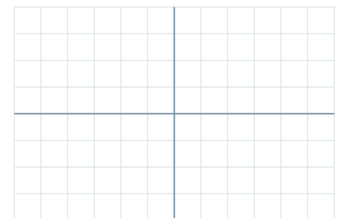
Simplify $(x^2 + 9x - 70)/(x - 5)$ and identify the excluded input and hole.

05

Solve $9\sin(3x) - 9/2 = 0$ for $0 \leq x < 2\pi$. Give an exact formula listing all roots.

06

Analyze and sketch one cycle of $y = 14\sin(2(x-7)) + 7$. Give amplitude, period, phase shift, midline, and five key points.



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01

Simplify $(x^2 + 3x - 88)/(x - 8)$ and identify the excluded input and hole.

Factor the numerator as $(x-8)(x+11)$. Cancel for $x \neq 8$; simplified rule $x+11$. The original domain excludes 8; the hole is (8, 19).

02

Solve $13\sin(7x) - 13/2 = 0$ for $0 \leq x < 2\pi$. Give an exact formula listing all roots.

$\sin(7x) = 1/2$. Thus $x = (\pi/6 + 2k\pi)/7$ or $x = (5\pi/6 + 2k\pi)/7$, $k=0,1,\dots,6$. There are 14 roots in the interval.

03

Analyze and sketch one cycle of $y = 12\sin(6(x-(0))) + 2$. Give amplitude, period, phase shift, midline, and five key points.

Amplitude 12; period $2\pi/6$; shift 0; midline $y=2$. Start at $x=0$; use x -increments $\pi/12$. The five y -values are 2, 14, 2, -10, 2.

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04

Simplify $(x^2 + 9x - 70)/(x - 5)$ and identify the excluded input and hole.

Factor the numerator as $(x-5)(x+14)$. Cancel for $x \neq 5$; simplified rule $x+14$. The original domain excludes 5; the hole is (5, 19).

05

Solve $9\sin(3x) - 9/2 = 0$ for $0 \leq x < 2\pi$. Give an exact formula listing all roots.

$\sin(3x) = 1/2$. Thus $x = (\pi/6 + 2k\pi)/3$ or $x = (5\pi/6 + 2k\pi)/3$, $k=0,1,\dots,2$. There are 6 roots in the interval.

06

Analyze and sketch one cycle of $y = 14\sin(2(x-7)) + 7$. Give amplitude, period, phase shift, midline, and five key points.

Amplitude 14; period $2\pi/2$; shift 7; midline $y=7$. Start at $x=7$; use x -increments $\pi/4$. The five y -values are 7, 21, 7, -7, 7.