

Pre Calculus Section 5 4 Part 1 Graphing parents function of Tangent, Cotangent, Secant ...

Lesson 168 | Trigonometry | Tangent, cotangent, secant and cosecant graphs

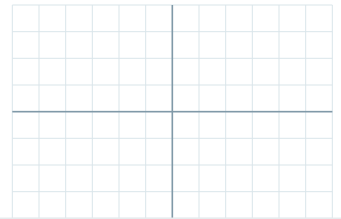
https://www.youtube.com/watch?v=GtOJuVFw_EY

Original practice aligned to the saved video title.

Name: _____ Date: _____ Show your reasoning.

01

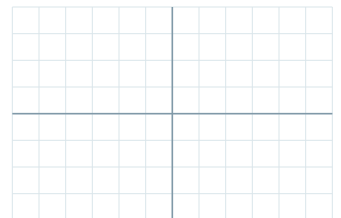
Graph $y=2\csc(7(x-7)))+12$. Give period, range, and all vertical asymptotes.

**02**

Analyze $y=5\cot(6(x-7)))+8$: period, asymptotes, and a central point between consecutive asymptotes.

03

Graph $y=12\tan(2(x-3)))+10$. Give period, center, and adjacent vertical asymptotes.



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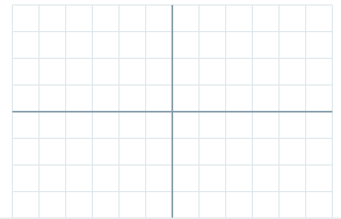
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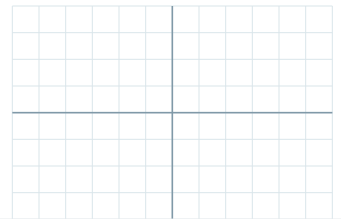
Name: _____ Date: _____ Show your reasoning.

04

Graph $y=3\sec(6(x-(0)))+12$. Give period, range, and all vertical asymptotes.

**05**

Graph $y=4\tan(3(x-(6)))+8$. Give period, center, and adjacent vertical asymptotes.

**06**

Analyze $y=9\cot(3(x-(-6)))+2$: period, asymptotes, and a central point between consecutive asymptotes.

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01

Graph $y=2\csc(7(x-7)))+12$. Give period, range, and all vertical asymptotes.

Period $2\pi/7$. Range $y \leq 10$ or $y \geq 14$. Sine zeros give asymptotes $x=7+k\pi/7$. k is any integer. Sketch reciprocal branches outside the excluded midline band.

02

Analyze $y=5\cot(6(x-7)))+8$: period, asymptotes, and a central point between consecutive asymptotes.

Period $\pi/6$. Asymptotes $x=7+k\pi/6$, k integer. Between $x=7$ and $x=7+\pi/6$, the midpoint is $(7+\pi/12, 8)$; cotangent decreases there.

03

Graph $y=12\tan(2(x-3)))+10$. Give period, center, and adjacent vertical asymptotes.

Period $\pi/2$; center $(3, 10)$; asymptotes $x=3 \pm \pi/4$. At $x=3 \pm \pi/8$, $y=10 \pm 12$, respectively. Repeat every $\pi/2$.

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04

Graph $y=3\sec(6(x-(0)))+12$. Give period, range, and all vertical asymptotes.

Period $2\pi/6$. Range $y\leq 9$ or $y\geq 15$. Cosine zeros give asymptotes $x=0+(\pi/2+k\pi)/6$. k is any integer. Sketch reciprocal branches outside the excluded midline band.

05

Graph $y=4\tan(3(x-(6)))+8$. Give period, center, and adjacent vertical asymptotes.

Period $\pi/3$; center $(6,8)$; asymptotes $x=6\pm\pi/6$. At $x=6\pm\pi/12$, $y=8\pm 4$, respectively. Repeat every $\pi/3$.

06

Analyze $y=9\cot(3(x-(-6)))+2$: period, asymptotes, and a central point between consecutive asymptotes.

Period $\pi/3$. Asymptotes $x=-6+k\pi/3$, k integer. Between $x=-6$ and $x=-6+\pi/3$, the midpoint is $(-6+\pi/6,2)$; cotangent decreases there.