

Innovation Academy

Curriculum Night
Mr. Cardwell

Advanced Algebra: Honors
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About me

- 2nd year at IA
- Graduated from Kennesaw State, B.S.Ed. in Secondary Mathematics
- Math tutor for 3 years before classroom teaching
- Fun facts:
 - I've run four marathons and hope to run an ultramarathon soon
 - I love music/concerts!



What is Advanced Algebra?



- Investigating Descriptive and Inferential Statistics
- Investigating Algebra and Matrices
- Modeling Polynomial Functions
- Exploring Rational Functions
- Investigating Radical Functions
- Modeling Exponential and Logarithmic Functions
- Exploring Trigonometry and the Unit Circle
- Culminating Capstone Unit



- Major Assessments (Tests) - 55%
 - Students who score below a 75 on major assessments should plan to take the recovery test.
- Minor Assessments (Quizzes) - 35%
 - Students will have the opportunity to recover a minor below a 75 by performing better on the major for that unit.
- Practice (HW) - 10%
 - Graded based on completion.
 - Weekly collection of homework

Grading

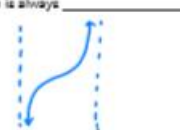


Expectations

- Have prerequisite skills
- Actively participate in class
- Do the work (practice is necessary for success!)
- Ask questions
- A graphing calculator is required for this course; one can be checked out by your student in the eXchange to use for the school year.
- Think critically
- Have fun 😊

Circuit Training Unit 7 Review Name: Key

Directions: Begin in cell #1. Show the work necessary to arrive at your answer. Search for your answer in one of the other cells and mark that cell #2, then work out the new problem. Proceed in this manner until you complete the circuit and arrive back at the first box. You do not need a calculator to complete this circuit.

# <u>1</u> Answer: $\frac{\sqrt{5} + \sqrt{2}}{4}$ Consider the function $f(\theta) = \tan\left(\frac{\pi}{5}\theta\right)$. What is $f\left(\frac{3\pi}{2}\right)$? $f\left(\frac{3\pi}{2}\right) = \tan\left(\frac{3\pi}{2}\right) = -1$	# <u>4</u> Answer: 3 What is the period of $y = \tan\left(\frac{\pi}{2}x\right)$? $\frac{\pi}{(\pi/2)} = 2$
# <u>13</u> Answer: $\frac{\pi}{2}$ Find all zeros of the function $g(x) = 4\cos^2 x - 3$ on the interval $[0, 2\pi]$. $\cos^2 x = \frac{3}{4}$ $\cos x = \pm \frac{\sqrt{3}}{2}$ $x = \frac{\pi}{6}, \frac{5\pi}{6}, \frac{7\pi}{6}, \frac{11\pi}{6}$	# <u>2</u> Answer: -1 The tangent function is always _____ on its domain. ① increasing 2. decreasing 3. concave up 4. concave down 
# <u>16</u> Answer: 2 Ken's distance above the ground (in inches) after t minutes on Barbie's Ferris wheel is given by $h(t) = 3\cos(\pi t) + 4$. What is Ken's maximum height? $4 + 3 = 7$	# <u>17</u> Answer: no solution Given $\csc \omega = \frac{5}{3}$ and $\frac{\pi}{2} \leq \omega \leq \pi$. Find $\sin \omega = \frac{3}{5}$ $\cos \omega = -\frac{4}{5}$ $\tan \omega = -\frac{3}{4}$ $\sec \omega = -\frac{5}{3}$ $\cot \omega = -\frac{4}{3}$ Search for the smallest value. $-4/3$ (most negative) 
# <u>20</u> Answer: $\frac{\pi}{2}, \frac{3\pi}{2}, \frac{5\pi}{2}, \frac{7\pi}{2}$ Find an exact value for $\cos \frac{\pi}{4}$. $\cos\left(\frac{\pi}{2} - \frac{\pi}{4}\right) = \cos\left(\frac{\pi}{2}\right)\cos\left(\frac{\pi}{4}\right) + \sin\left(\frac{\pi}{2}\right)\sin\left(\frac{\pi}{4}\right)$ $\cos \frac{\pi}{4} = \frac{1}{2} \cdot \frac{\sqrt{2}}{2} + \frac{\sqrt{2}}{2} \cdot \frac{1}{2} = \frac{\sqrt{2}}{2} + \frac{\sqrt{2}}{4} = \frac{3\sqrt{2}}{4}$	# <u>19</u> Answer: 5 Solve $\cos x = \sin(2x)$ for $0 \leq x \leq 2\pi$. $\cos x = 2\sin x \cos x$ $\cos x = 0$ or $\sin x = \frac{1}{2}$ $x = \frac{\pi}{2}, \frac{3\pi}{2}$ or $x = \frac{\pi}{6}, \frac{5\pi}{6}$
# <u>3</u> Answer: 1 At the x-values where $f(x) = \cos x$ has a relative maximum, $g(x) = \sec x$ has a _____. 1. Vertical asymptote 2. Relative maximum 3. Relative minimum 4. X-intercept 	# <u>5</u> Answer: 4 $\tan^{-1}(-1) = -\pi/4$



Support



- Help Sessions Before School
 - I am available most mornings after 8:15 am till the beginning of 1st period, including quiz and test days.
- Flex Fridays
 - Students should select tutoring on the Flex Friday form
 - 8:55 am – 9:25 am
 - 9:30 am – 10:00 am
- Other resources?
 - Math Tutoring Center



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