Algebra II

Name _____ Date _____

SESSION 1

Explain an interval rate

A cooling model is T(t) = 20 + 60(0.5)^(t/10), where t is minutes and T is °C. Find average rate of change from 0 to 20 minutes. Interpret its sign and explain whether it represents the rate every minute.

Start here if you were away. Find T(0) and T(20) before subtracting.

SESSION 2

Read a periodic pattern

A wheel seat is 2, 10, 18, 10 and 2 meters high at t = 0, 3, 6, 9 and 12 seconds. Assume one full sinusoidal cycle. Find the midline, amplitude and period. Give a model and predict the height at 15 s.

Time (s)	0 / 3	6 / 9	12
Height (m)	2 / 10	18 / 10	2

Start here if you were away. Mark the minimum and maximum. Their midpoint is the midline.

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SESSION 3

Solve an exponential threshold

A device retains 90% of its previous charge each hour, starting at 100 units. Solve for the first whole hour at which the charge is below 50. Show an inequality and verify adjacent whole hours.

Start here if you were away. Write charge after two hours as repeated multiplication.

SESSION 4

Keep the domain after canceling

For $f(x) = (x^2 - 9)/(x - 3)$, a student writes $f(x)=x+3$ for every real x. Evaluate the claim, give the domain, and describe the missing point on the graph.

Start here if you were away. Factor the numerator before canceling.

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SESSION 5

What a simulation supports

A fair-coin model was used to simulate 20 tosses 200 times. Four simulations had 16 or more heads. An actual coin gave 16 heads in 20 tosses. Estimate the one-sided tail probability and explain the strength and limit of the evidence.

Start here if you were away. Underline the number of simulated experiments and the number in the tail.

SESSION 6

Transfer the rate to a new family

Water depth is d(t) = 5 + 2 sin(πt/6) meters, with hours t from 0 to 12 and radian argument. Find average rate from t=0 to t=3, and the first time the depth reaches 6 m. Explain why the rate from 0 to 6 alone could mislead.

Start here if you were away. Sketch the midline and calculate d(0) and d(3).