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| ***30.12 and 30.13*** | **2** | **3** | **4** |
| **Outcome 11:** I can demonstrate understanding of permutations, combinations, and the binomial theorem | I can demonstrate the process to:* Solve basic permutations
* Apply the fundamental counting principle
* Solve basic combinations

I can complete a missing row of Pascal’s triangleI can determine missing numbers in expansions involving the binomial theorem. | I can determine the number of permutations or combinations:* With repetitions
* With restrictions

I can determine whether a question is a permutation or a combination.I can apply the binomial theorem to expansions of (x+y) | In addition to demonstrating level 3 performance, I am capable of in depth inferences and applications that go **beyond** what was taught in class |

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| ***30.11*** | **2** | **3** | **4** |
| **Outcome 2:** I can demonstrate understanding of rational and radical functions. | I can sketch the graph of $y=\sqrt{(x)}$ using a table of valuesI can identify of a, b, h, k given a transformation of radical functionSketch the graph of $y=\sqrt{f(x)}$ given the graph of $y=f(x)$ADD RATIONAL FUNCTIONS HERE | I can explain the role of a, b, h, and k given an equation graph $y-k=a\sqrt{b(x-h)}$ I can compare the domains and ranges of $y=\sqrt{f(x)}$ and $y=f(x)$Graphically solve Radical Equations with technology | In addition to demonstrating level 3 performance, I am capable of in depth inferences and applications that go **beyond** what was taught in class |

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| ***30.11v13 LK*** | **2** | **3** | **4** |
| **Outcome 9:** I can demonstrate understanding of rational functions. | Definitions:* Rational expression
* Asymptote
* Hole

Identify from a graph:* Roots and holes
* Asymptotes
* Domain and Range
* End behavior

Find solutions to rational equations using technology | I can match a set of equations of rational functions to their corresponding graphsDetermine asymptotes and holes from an equationWrite the equation given a graphGraph the function given a set of characteristics | In addition to demonstrating level 3 performance, I am capable of in depth inferences and applications that go **beyond** what was taught in class |

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| ***30.10v14*** | **2** | **3** | **4** |
| **Outcome 3a:** I can demonstrate understanding of polynomials and polynomial functions of degree higher than 2 by factoring | Identify polynomial functionsDivide a polynomial by x-a using either long division or synthetic division.Use the remainder theorem to determine the remainderUse the factor theorem to determine if x-a is a factor of P(x) | Demonstrate the process of Factoring polynomials of degree 2 and higher using the factor theoremFind the value of ‘c’ (an unknown coefficient in a polynomial when divided by a binomial)Synthetic Division with ‘ax – b’ | In addition to demonstrating level 3 performance, I am capable of in depth inferences and applications that go **beyond** what was taught in class |

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| ***30.10*** | **2** | **3** | **4** |
| **Outcome 3:** I can demonstrate understanding of polynomial functions of degree higher than 2 by graphing | Match a polynomial function with its graph based on degree, end behavior, number of x interceptsGiven a graph determine the least possible degree, sign of leading coefficient, x intercepts, intervals where functions is positive and negativeAnalyze factored equations to sketch polynomial functions | Analyze Equations to sketch Polynomial functionsDetermine an equation given specific characteristics of the polynomial function | In addition to demonstrating level 3 performance, I am capable of in depth inferences and applications that go **beyond** what was taught in class |

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| ***30.9*** | **2** | **3** | **4** |
| **Outcome 7:** I can demonstrate an understanding of exponential functions. | I can distinguish/identify between exponential growth and decay given a graph or an equationI can sketch y = ax using a table of values and state the graph characteristicsI can rewrite exponential expressions with a specified baseI can identify a, b, h, and k as well as describe the transformations | I can write the equation of an exponential functions given a graph or transformations to y = ax I can sketch y = a(c)b(x-h) + k by making a table of values and also with technologyI can solve exponential equations with and without technologyI can match a graph to:* An equation
* A situation
* A set of transformations
 | In addition to demonstrating level 3 performance, I am capable of in depth inferences and applications that go **beyond** what was taught in class |

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| ***30.9*** | **2** | **3** | **4** |
| **Outcome 8:** I can Demonstrate an understanding of logarithmic functions | Express a logarithmic expression as an exponential expression and vice versa.Evaluate logs by inspectionIdentify the transformations of the graphSolve basic logarithmic equations | Sketch with or without technology the graphs of logarithmic functions of the form $y=log\_{b}x, b>1$. Sketch log functions with and without technologySolve advanced logarithmic equations | In addition to demonstrating level 3 performance, I am capable of in depth inferences and applications that go **beyond** what was taught in class |

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| ***30.9*** | **2** | **3** | **4** |
| **Outcome8b:** removed  | Apply strategies for solving logarithmic equations | Solve situational questions that involve exponential growth or decay, such as loans, mortgages, and investmentsSolve situational questions involving logarithmic scales, such as the Richter scale and pH scale. | In addition to demonstrating level 3 performance, I am capable of in depth inferences and applications that go **beyond** what was taught in class |

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| ***30.1v13lk*** | **2** | **3** | **4** |
| **Outcome 4:** Demonstrate understanding of trigonometry and the unit circle  | I can convert between degrees and radiansI can calculate:* all coterminal angles
* arc length
* solutions to basic trig equations

Determine approximate values of trig ratios for any angle and exact values for 300, 450, 600Apply properties of the unit circle to find unknown valuesI can solve trig equations using technology | I can solve trig equations, with and without using exact valuesI can write all six trig ratios given coordinates on terminal ray or θ.Solve basic situational questions | In addition to demonstrating level 3 performance, I am capable of in depth inferences and applications that go **beyond** what was taught in class |

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| ***30.3*** | **2** | **3** | **4** |
| **Outcome 5:** Demonstrate understanding of the graphs of the primary trigonometric functions.  | I can sketch the graph of sin x, cos x, and tan x over one positive and one negative period.For trig graphs, I can determine* Amplitude
* Period
* Phase shift
* Asymptotes and zeros
* Domain and range
 | Write equations for a given trig graph.I can apply strategies to graph  Y = a sin b (x-c) + d and  Y= a cos b (x-c) + d | In addition to demonstrating level 3 performance, I am capable of in depth inferences and applications that go **beyond** what was taught in class |

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| ***30.4*** | **2** | **3** | **4** |
| **Outcome 4????:** Demonstrate understanding of first- and second-degree trigonometric equations**.**  | I can verify solutions for a given trig equation.I can determine, algebraically, exact solutions for basic trig equationsI can solve trig equations using technology  | I can determine general solutions to trig equationsI can solve a multiple step equations. | In addition to demonstrating level 3 performance, I am capable of in depth inferences and applications that go **beyond** what was taught in class |

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| ***30.5*** | **2** | **3** | **4** |
| **Outcome 6:** Demonstrate understanding of trigonometric identities including:  | I can verify trig identitiesI can prove simple trig identities Determine the exact values of trig ratios using sum, difference and double angle identities. | I can determine non-permissible values of trig identities. I can prove more complicated identities. | In addition to demonstrating level 3 performance, I am capable of in depth inferences and applications that go **beyond** what was taught in class |

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| ***30.6*** | **2** | **3** | **4** |
| **Outcome 10a:** Demonstrate an understanding of operations on, and compositions of, functions.  | I can sketch a function that is sum, difference, product, quotient or composites of two given graphs.Write equations of a function that results from the sum, difference, product, quotient of two or more functions.  | I can write an equation/function as a composition of two or more functions.I can determine the domain and range for sums, differences, and composite functions. | In addition to demonstrating level 3 performance, I am capable of in depth inferences and applications that go **beyond** what was taught in class |

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| ***30.7 & 30.8*** | **2** | **3** | **4** |
| **Outcome 1:** I can extend my understanding of transformations and reflections  | I can identify the parameters a, b, h, and k and describe their effect on y=f(x)I can sketch functions with single transformations, stretches, and reflections of y = f(x) when given the graph of y=f(x).I can write equations of functions with single transformations or reflections through the x- axis, y-axis or y = x line. | I can determine if two relations are inverses of each other.I can describe and graph combinations of transformations, stretches, and reflections.I can write the equation of translated functions in the form **y = a f(b(x-h))+k****Image Points** | In addition to demonstrating level 3 performance, I am capable of in depth inferences and applications that go **beyond** what was taught in class |