2008 NATEF ACADEMIC STANDARDS CORRELATIONS
APPLIED MATHEMATICS SKILLS

NATEF Applied Mathematics Skills		Student Edition Vols. 1 & 2	Academic Applications
AM-1	***Whole Numbers*** The technician can add whole numbers to determine measurement conformance with the manufacturer's specifications.	EP-424, SS-572, HA-509	Pages 39-40, 56
AM-2	***Decimals*** The technician can add decimal numbers to determine conformance with the manufacturer's specifications.	EL-257, EP-463, EP-482, HA-372	Pages 17, 19, 27-28, 43-44, 84
AM-3	***Mentally*** The technician can mentally add two or more numbers to determine conformance with the manufacturer's specifications.	BR-177, SS-588, HA-309	Pages 19, 57-58
AM-4	***Whole Numbers*** The technician can subtract whole numbers to determine differences for comparison with the manufacturer's specifications.	BR-177, EP-463, ER-158	Pages 13, 43-44, 63-64
AM-5	***Decimals*** The technician can subtract decimal numbers to determine conformance with the manufacturer's specifications.	BR-149, BR-177, EP-374, EP-424, HA-372	Pages 13, 18, 19, 35-36, 39-40, 73
AM-6	***Mentally*** The technician can mentally subtract decimal and whole numbers to arrive at a difference for comparison with the manufacturer's specifications.	BR-177, HA-309	Pages 19, 63-64, 77
AM-7	***Whole Numbers*** The technician can divide whole numbers to determine differences for comparison with the manufacturer's specifications.	SS-572, ER-158	Page 56
AM-8	***Decimals*** The technician can divide decimal numbers to determine measurement conformance with the manufacturer's specifications.	BR-149, EL-257, EL-282, EL-310, ER-119, HA-309, HA-350	Pages 27-28, 29, 31, 35-36, 47-48, 49-50, 73

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AM-9 ***Mentally*** The technician can mentally divide decimal and whole numbers to determine conformance with the manufacturer's specifications.	BR-177, SS-588, HA-309, HA-350, HA-385	Pages 19, 77, 83
AM-10 ***Whole Numbers*** The technician can multiply whole numbers to determine differences for comparison with the manufacturer's specifications.	BR-116, BR-123, BR-183, EL-257, EP-499	Pages 15-16, 17, 20, 27-28, 89-90
AM-11 ***Decimals*** The technician can multiply decimal numbers to determine conformance with the manufacturer's specifications.	BR-116, BR-123, EL-310, EP-361, EP-374, EP-438, EP-463, EP-424, SS-526, ER-119, ER-158, HA-309, HA-320, HA-350, AT-413	Pages 31, 39-40, 41-42, 43-44, 49-50, 51-52, 73, 77, 81-82, 83, 85-86, 127, 128, 286
AM-12 ***Mentally*** The technician can mentally multiply numbers that include decimal numbers to determine conformance with the manufacturer's specifications.	BR-177, SS-588, HA-309, HA-350, HA-385	Pages 11-12, 19, 77, 83, 85-86
AM-13 ***Add/Subtract/Divide/Multiply*** The technician can estimate the results of basic arithmetic operations and can accurately round up or down.	BR-116, BR-123, EL-310, MD-631, MD-687	Pages 11-12, 13, 15-16, 17, 31, 49-50, 105-106, 109-110
AM-14 ***Mentally*** The technician can determine the proper mathematical operation (addition, multiplication, subtraction or division) and mentally arrive at the solution.	EL-334	Pages 32, 63-64
AM-15 ***Mean/Median/Mode*** The technician can calculate the average (mean) of several measurements to determine any variance from the manufacturer's specifications.	EP-463, EP-482	Pages 43-44

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AM-16 ***Charts/Tables/Graphs*** The technician can construct a chart, table, or graph that depicts and compares a range of performance characteristics of various system operational conditions.	BR-210, EP-482, ER-261, HA-284	Pages 23-24, 75-76
AM-17 ***Charts/Tables/Graphs*** The technician can interpret charts, tables, and graphs to determine the manufacturer's specifications for a given system.	BR-203, EL-294, EP-405, EP-424, EP-463, EP-482, SS-543, ER-261, HA-284, AT-481, AT-510, MD-562	Pages 21-22, 30, 37-38, 39-40, 43-44, 55, 75-76, 92, 95-96, 99-100
AM-18 ***Standard/Metric--Feet/Meters*** The technician can measure/test with tools designed for standard or metric measurements and then convert the resulting measurement to the system used by the manufacturer for specifications and tolerances.	BR-116, BR-123, EP-361, EP-438, EP-499, ER-119, HA-350, AT-413	Pages 15-16, 17, 41-42, 49-50, 83, 87
AM-19 ***Proper Operation*** The technician can determine the sequence of arithmetic operations to arrive at a solution when comparing system measurements with the manufacturer's specifications.	BR-149, BR-177, BR-183	Pages 17, 18, 19, 20, 74
AM-20 ***Place Value*** The technician can interpret standard or metric units when conducting precision measurements.	EL-334, EP-463, ER-212	Pages 31, 32, 43-44, 67-68
AM-21 ***Parallel/Perpendicular*** The technician can use measurement devices to determine the parallelism or perpendicularity of chassis, suspension, and other vehicle systems requiring the application of geometric alignment principles.	BR-149, BR-177, SS-588, MD-603, MD-687	Pages 18, 19, 57-58, 103-104, 109-110

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AM-22 ***Angles*** The technician can use angle measurement equipment and techniques to determine any vehicle angle measurement variance from the manufacturer's specifications.	SS-588, MD-603, MD-687	Pages 21-22, 103-104, 109-110
AM-23 ***Angles*** The technician can visually formulate an angle, (e.g. suspension system or driveline) and verify its conformance to the manufacturer's specified angle.	SS-588, MD-603, MD-687	Pages 57-58, 103-104, 109-110
AM-24 ***Geometric Figures*** The technician can distinguish whether or not the angles between related parts (e.g. suspension components) are within the manufacturer's specifications.	SS-588, MD-687	Pages 57-58, 109-110
AM-25 ***Relationships*** The technician verifies that the relationship of parallel lines and angles is in conformance with the manufacturer's specifications.	SS-588, MD-603, MD-687	Pages 57-58, 103-104, 109-110
AM-26 ***Visual Perception*** The technician can visually perceive the geometric relationships of systems and subsystems requiring alignment.	BR-183, EL-294, SS-588	Pages 20, 89-90
AM-27 ***Distance*** The technician can measure distance using a variety of devices to determine conformance to the manufacturer's specifications and tolerances.	BR-149, ER-243	Pages 17, 71-72
AM-28 ***Distance*** The technician can use standard and metric measurement instruments to determine correct sizes and distances.	HA-372	Page 84

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AM-29 ***Volume*** The technician can use various measurement techniques to determine volume as applicable.	EP-361, EP-405, ER-119, ER-149, ER-212, HA-309, AT-413	Pages 41-42, 49-50, 61-62, 67-68, 77, 87
AM-30 ***Volume*** The technician can determine if the existing volume is within the manufacturer's recommended tolerance.	EP-463, ER-212	Pages 43-44, 67-68, 229-230
AM-31 ***Length/Volume/Weight*** The technician can determine the degree of conformance to the manufacturer's specifications for length, volume, weight, and other appropriate measurements in the standard and metric systems.	EP-361, ER-119, ER-243, EL-334, SS-526, ER-158, HA-372, AT-413	Pages 15-16, 17, 18, 19, 20, 29, 32, 35-36, 39-40, 41-42, 43-44, 49-50, 51-52, 56, 57-58, 61-62, 63-64, 71-72, 84, 87
AM-32 ***Fahrenheit/Centigrade*** The technician can identify whether a temperature measurement should be made using a measuring device that measures °C or °F.	BR-116	Pages 15-16, 229-230
AM-33 ***Temperature*** The technician can use standard and metric temperature measurement instruments to measure system temperature and determine conformance to metric specifications.	BR-116, HA-284	Pages 75-76, 225-226, 240
AM-34 ***Time*** The technician can use different time measurement tools and techniques to determine if the system's timed or sequenced operating parameters are in conformance with the manufacturer's specifications.	EP-405, EP-424	Pages 39-40, 260
AM-35 ***Standards*** The technician can demonstrate conformance to standards defined by the industry and/or manufacturer for the system being analyzed.	EP-482, SS-526, AT-481	Pages 51-52, 79-80, 92

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AM-36 ***Ratios/Percents*** The technician can convert test readings in decimal or fractional form to a ratio or percentage form for comparison with manufacturer's specifications and vice versa.	EP-405, HA-320, MD-631	Pages 37-38, 63-64, 105-106
AM-37 ***Mentally*** When comparing the observed measurement with the manufacturer's specifications, the technician can mentally compute whether the observed measurement meets specifications.	BR-149, BR-177, EL-294, EP-374, EP-482, SS-588	Pages 18, 19, 30, 35-36, 47-48, 57-58, 63-64
AM-38 ***Estimate/Exact Value*** The technician can distinguish the need to use a specified value versus an estimated value, depending upon the system malfunction.		Page 14
AM-39 ***Equal/Not Equal*** The technician can distinguish when a measurement is not equal to the manufacturer's specifications or tolerances.	BR-177, EL-294, AT-481, AT-510	Pages 19, 63-64, 92, 95-96
AM-40 ***Proportion*** The technician can solve problems that determine the proportion of variables of a solution and determine if that proportion is within the manufacturer's specifications.	BR-149, BR-177, SS-572	Pages 56, 229-230
AM-41 ***Proportion/Congruence*** The technician can distinguish the congruence of measurements with tolerances specified by the manufacturer.	BR-149, BR-177, AT-510	Pages 18, 19, 45-46, 63-64, 95-96
AM-42 ***Everyday Occurrences*** The technician compares the performance outcome of a normally operating system with the anticipated outcome of an everyday occurrence, such as system tolerances to the manufacturer's specifications.	EP-424, AT-500	Pages 39-40, 49-50, 93-94

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AM-43 ***Direct/Inverse Variation*** The technician can solve problems requiring the use of fractions, decimals, ratios, and percentages.	BR-183, EP-405, ER-174, ER-230, HA-372, AT-500, MD-586	Pages 20, 65-66, 69-70, 84, 93-94, 101-102, 193-194, 231-232
AM-44 ***Formulas*** Using formulae, the technician can predict the outcome/s under different variations.	SS-572, ER-149, HA-309, HA-350, MD-631	Pages 56, 61-62, 77, 83, 105-106
AM-45 **<, >, =, *e.g.*** The technician can interpret symbols to determine conformance with the manufacturer's specifications.	SS-588	Pages 57-58, 63-64
AM-46 ***Equivalent Form*** The technician can write or rewrite an algebraic to solve for any unknown variables.	BR-116, BR-123, EL-232, EL-334, ER-149, ER-174, ER-212, ER-230, AT-500, MD-562, MD-586	Pages 15-16, 17, 25-26, 32, 61-62, 67-68, 69-70, 89-90, 93-94, 99-100, 101-102, 119
AM-47 ***Specified Symbols*** The technician can use conventional symbols (E for voltage, etc.) to solve problems using formulas such as Ohm's Law, E=IR.	EL-232, EL-257, EL-282, EL-310, HA-350, HA-385	Pages 25-26, 27-28, 29, 31, 83, 85-86, 131-132
AM-48 ***Algebraic Expressions*** The technician can use Ohm's Law and Power Law to determine circuit parameters that are out-of-tolerance.	EL-257, EL-282, EL-310, HA-385	Pages 25-26, 27-28, 29, 31, 85-86
AM-49 ***Conditionals*** The technician understands that if the described problem has certain conditions (symptoms), then there are a limited number of probable solutions.	BR-177, EP-482, AT-550	Pages 19, 97-98
AM-50 ***Deductive Reasoning*** The technician can identify the specific cause of the problem by generating conclusions based on known symptoms related to the problem.	EL-294, ER-230, AT-550	Pages 97-98

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AM-51 ***Trial and Error*** The technician is able to solve problems by trying a suggested solution and observing the results.	BR-123, BR-149, BR-177	Pages 17, 18, 314
AM-52 ***Probability*** The technician can relate problem symptoms to the probability of the malfunction of a specific part or system.	BR-149, BR-177	Pages 18, 19, 53-54
AM-53 ***Word Problems*** The technician can evaluate symptoms of problems with a customer or associate technician and identify any relevant missing data required to solve the problem.	SS-526	Pages 51-52, 53-54, 348