Rubric based on the v8.3 Year 10 Mathematics Achievement Standard

Achievement Standard	Levels / Criteria (Assessable Elements)	A Excellent 1 Advanced	B Good 2 Proficient	C Satisfactory 3 Functional	D Partial 4 Developing	E Minimal 5
Knowledge and Understanding (Extent of knowledge Depth of understanding as demonstrated through the Proficiencies)	Recognise the connection between simple and compound interest	Highly accurate and comprehensive recognition of the connection between simple and compound interest	Mostly accurate recognition of the connection between simple and compound interest	Generally accurate recognition of the connection between simple and compound interest	Partially accurate recognition of the connection between simple and compound interest	Minimal recognition of the connection between simple and compound interest
	Solve problems involving linear equations and inequalities (As Problem Solving is a high level skill, two qualifiers with a conjunction have been used for the A-D range)	Highly efficient and highly accurate problem solving involving linear equations and inequalities in familiar and unfamiliar contexts	Mostly efficient and mostly accurate problem solving involving liner equations and inequalities in familiar and some unfamiliar contexts	Generally efficient and generally accurate problem solving involving liner equations and inequalities in familiar contexts	Partially efficient and partially accurate problem solving involving liner equations and inequalities in familiar contexts	Attempts problem solving involving liner equations and inequalities in familiar contexts with limited efficiency and accuracy
	Make the connections between algebraic and graphical representations of relations	In-depth and comprehensive understanding when making connections between algebraic and graphical representations of relations	Proficient understanding when making connections between algebraic and graphical representations of relations	Sound understanding when making connections between algebraic and graphical representations of relations	Partial understanding when making connections between algebraic and graphical representations of relations	Little understanding when attempting to make connections between algebraic and graphical representations of relations
	Solve surface area and volume problems relating to composite solids (As Problem Solving is a high level skill, two qualifiers with a conjunction have been used for the A-D range)	Highly efficient and highly accurate problem solving involving surface area and volume relating to composite solids	Mostly efficient and mostly accurate problem solving involving surface area and volume relating to composite solids	Generally efficient and generally accurate problem solving involving surface area and volume relating to composite solids	Partially efficient and partially accurate problem solving involving surface area and volume relating to composite solids	Attempts problem solving involving surface area and volume relating to composite solids with limited efficiency and accuracy
	Recognise the relationships between parallel and perpendicular lines	Highly accurate and comprehensive recognition of the relationships between parallel and perpendicular lines	Mostly accurate recognition of the relationships between parallel and perpendicular lines	Generally accurate recognition of the relationships between parallel and perpendicular lines	Partially accurate recognition of the relationships between parallel and perpendicular lines	Minimal recognition of the connection between parallel and perpendicular lines

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	Apply deductive reasoning to proofs and numerical exercises involving plane shapes	Highly logical and successful application of deductive reasoning to proofs and numerical exercises involving plane shapes	Mostly logical application of deductive reasoning to proofs and numerical exercises involving plane shapes	Generally logical application of deductive reasoning to proofs and numerical exercises involving plane shapes	Partial logical application of deductive reasoning to proofs and numerical exercises involving plane shapes	Limited deductive reasoning of proofs and numerical exercises involving plane shapes
	Compare data sets by referring to the shape of the various data displays (As comparison of similarities and differences is the high level skill of analysis, two qualifiers with a conjunction have been used for the A-D range)	Highly accurate and highly logical comparison of data sets referring to the shape of the various data displays	Mostly accurate and mostly logical comparison of data sets referring to the shape of the various data displays	Generally accurate and generally logical comparison of data sets referring to the shape of the various data displays	Partially accurate and partially logical comparison of data sets referring to the shape of the various data displays with guidance	Limited comparison of data sets referring to the shape of the various data displays with direction
	Describe bivariate data where the independent variable is time	A lucid and comprehensive description of bivariate data where the independent variable is time	A clear description of bivariate data where the independent variable is time	A generally clear description of bivariate data where the independent variable is time	A partially clear description of bivariate data where the independent variable is time	A vague description of bivariate data where the independent variable is time
	Describe statistical relationships between two continuous variables	A lucid and comprehensive description of statistical relationships between two continuous variables	A clear description of statistical relationships between two continuous variables	A generally clear description of statistical relationships between two continuous variables	A partially clear description of statistical relationships between two continuous variables	A vague description of statistical relationships between two continuous variables
	Evaluate statistical reports (As Evaluation is a high level skill, two qualifiers with a conjunction have been used for the A-C range)	Comprehensive and insightful evaluation of statistical reports	Proficient and perceptive evaluation of statistical reports	Capable and thoughtful evaluation of statistical reports	Obvious evaluation of statistical reports with guidance	Evaluation of statistical reports with direction
Mathematical Skills **(Sophistication of skills as demonstrated through the Proficiencies)**	Expand binomial expressions and factorise monic quadratic expressions	Highly fluent expansion of binomial expressions and factorisation of monic quadratic expressions	Mostly fluent expansion of binomial expressions and factorisation of monic quadratic expressions	Generally fluent expansion of binomial expressions and factorisation of monic quadratic expressions	Partially fluent expansion of binomial expressions and factorisation of monic quadratic expressions	Limited expansion of binomial expressions and factorisation of monic quadratic expressions
	Find unknown values after substitution into formulas	Highly competent finding of unknown vales after substitution into formulas with comprehensive justification	Mostly competent finding of unknown vales after substitution into formulas that is well-justified	Generally competent finding of unknown vales after substitution into formulas with adequate justification	Some competence in finding of unknown vales after substitution into formulas with partial justification	Limited competence in finding of unknown vales after substitution into formulas with minimal justification

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Note: Degrees of accuracy are assumed in the A-E range for all skills.						
	Perform the four operations with simple algebraic fractions	Performs the four operations with simple algebraic fractions in a highly competent manner with comprehensive justification	Performs the four operations with simple algebraic fractions in a mostly competent manner that is well-justified	Performs the four operations with simple algebraic fractions in a generally competent manner with adequate justification	Performs the four operations with simple algebraic fractions with some competence and partial justification	Performs the four operations with simple algebraic fractions with limited competence and minimal justification
	Solve simple quadratic equations and pairs of simultaneous equations (As Problem Solving is a high level skill, two qualifiers with a conjunction have been used for the A-D range)	Highly effective and highly efficient problem solving involving simple quadratic equations and pairs of simultaneous equations	Mostly effective and mostly efficient problem solving involving simple quadratic equations and pairs of simultaneous equations	Generally effective and generally efficient problem solving involving simple quadratic equations and pairs of simultaneous equations	Partially effective and partially efficient problem solving involving simple quadratic equations and pairs of simultaneous equations	Elementary problem solving involving simple quadratic equations and pairs of simultaneous equations
	Use triangle and angle properties to prove congruence and similarity	Uses triangle and angle properties to prove congruence and similarity in a highly skilful manner that is comprehensively justified	Uses triangle and angle properties to prove congruence and similarity in a mostly skilful manner that is well-justified	Uses triangle and angle properties to prove congruence and similarity in a generally skilful manner that is adequately justified	Uses triangle and angle properties to prove congruence and similarity with some skill and partial justification	Uses triangle and angle properties to prove congruence and similarity with limited skill and little justification
	Use trigonometry to calculate unknown angles in right-angled triangles	Uses trigonometry to calculate unknown angles in right-angled triangles in a highly skilful manner	Uses trigonometry to calculate unknown angles in right-angled triangles in a mostly skilful manner	Uses trigonometry to calculate unknown angles in right-angled triangles in a generally skilful manner	Uses trigonometry to calculate unknown angles in right-angled triangles with some skill	Uses trigonometry to calculate unknown angles in right-angled triangles with limited skill
	List outcomes for multi-step chance experiments and assign probabilities for these experiments	Outcomes for multi-step chance experiments and assignation of probabilities for these experiments are listed in a highly fluent manner	Outcomes for multi-step chance experiments and assignation of probabilities for these experiments are listed in a mostly fluent manner	Outcomes for multi-step chance experiments and assignation of probabilities for these experiments are listed in a generally fluent manner	Outcomes for multi-step chance experiments and assignation of probabilities for these experiments are listed with some fluency	Outcomes for multi-step chance experiments and assignation of probabilities for these experiments are listed with minimal fluency
	Calculate quartiles and inter-quartile ranges	Calculates quartiles and inter-quartile ranges in a highly competent manner with comprehensive reasoning	Calculates quartiles and inter-quartile ranges in a mostly competent manner with substantial reasoning	Calculates quartiles and inter-quartile ranges in a generally competent manner with adequate reasoning	Calculates quartiles and inter-quartile ranges in a partially competent manner with obvious reasoning	Calculates quartiles and inter-quartile ranges in a limited manner with direction

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