Grade 7 PBA/MYA

Evidence Statement Key	Evidence Statement Text	Clarifications	MP	Calculator
7.RP.1	Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. *For example, if a person walks 1/2 mile in each 1/4 hour, compute the unit rate as the complex fraction* $\frac{\frac{1}{2}}{\frac{1}{4}}$ *miles per hour, equivalently 2 miles per hour.*	i) Tasks have a context.	2, 6, 4	Yes
7.RP.2a	Recognize and represent proportional relationships between quantities. a. Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.	i) Tasks have "thin context" or no context. ii) Tasks may offer opportunities for students to investigate a relationship by constructing graphs or tables; however, students can opt not to use these tools. iii) Tasks are not limited to ratios of whole numbers.	2, 5	Yes
7.RP.2b	Recognize and represent proportional relationships between quantities. b. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.	i) Pool should contain tasks with and without context. ii) Tasks sample equally across the listed representations (graphs, equations, diagrams, and verbal descriptions).	2, 8, 5	No
7.RP.2c	Recognize and represent proportional relationships between quantities. c. Represent proportional relationships by equations. *For example, if total cost t is proportional to the number n of items purchased at a constant price p, the relationship between the total cost and the number of items can be expressed as* $t = pn$.	i) Tasks have a context.	2, 8	No

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Evidence Statement Key	Evidence Statement Text	Clarifications	MP	Calculator
7.NS.1a	Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram. a. Describe situations in which opposite quantities combine to make 0. *For example, a hydrogen atom has 0 charge because its two constituents are oppositely charged.*	i) Tasks require students to recognize or identify situations of the kind described in standard 7.NS.1a.	5	No
7.NS.1b-1	Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram. b. Understand $p+q$ as the number located a distance $\|q\|$ from *p*, in the positive or negative direction depending on whether *q* is positive or negative.	i) Tasks do not have a context. ii) Tasks are not limited to integers. iii) Tasks involve a number line. iv) Tasks do not require students to show in general that a number and its opposite have a sum of 0: this aspect of standard 7.NS.1b may be assessed on the Grade 7 PBA.	5, 7	No
7.NS.1b-2	Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram. b. Interpret sums of rational numbers by describing real-world contexts.	i) Tasks require students to produce or recognize real-world contexts that correspond to given sums of rational numbers. ii) Tasks are not limited to integers. iii) Tasks do not require students to show in general that a number and its opposite have a sum of 0: this aspect of standard 7.NS.1b may be assessed on the Grade 7 PBA.	2, 3, 5	No

Evidence Statement Key	Evidence Statement Text	Clarifications	MP	Calculator
7.NS.1c-1	Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram. c. Understand subtraction of rational numbers as adding the additive inverse, $p-q=p+(-q)$. Apply this principle in real-world contexts.	i) Pool should contain tasks with and without contexts. ii) Contextual tasks might, for example, require students to create or identify a situation described by a specific equation of the general form $p-q=p+(-q)$ such as $3-5=3+(-5)$. iii) Non-contextual tasks are not computation tasks but rather require students to demonstrate conceptual understanding, for example by identifying a sum that is equivalent to a given difference. For example, given the difference $-\frac{1}{3}-\left(\frac{1}{5}+\frac{5}{8}\right)$, the student might be asked to recognize the equivalent expression $-\frac{1}{3}+-\left(\frac{1}{5}+\frac{5}{8}\right)$. iv) Tasks are not limited to integers.	2, 7, 5	No
7.NS.1d	Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram. d. Apply properties of operations as strategies to add and subtract rational numbers.	i) Tasks do not have a context. ii) Tasks are not limited to integers. iii) Tasks may involve sums and differences of 2 or 3 rational numbers. iv) Tasks require students to represent addition and subtraction on a horizontal or vertical number line, or compute a sum or difference, or demonstrate conceptual understanding for example by producing or recognizing an expression equivalent to a given sum or difference. For example, given the sum $-8.1+7.4$, the student might be asked to recognize or produce the equivalent expression $-(8.1-7.4)$.	7, 5	No

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Evidence Statement Key	Evidence Statement Text	Clarifications	MP	Calculator
7.NS.2a-1	Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. a. Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as $(-1)(-1)=1$ and the rules for multiplying signed numbers.	i) Tasks do not have a context. ii) Tasks are not computation tasks but rather require students to demonstrate conceptual understanding, for example by providing students with a numerical expression and requiring students to produce or recognize an equivalent expression using properties of operations, particularly the distributive property. For example, given the expression $(-3)(6+-4+-3)$, the student might be asked to recognize that the given expression is equivalent to $(-3)(6+-4)+(-3)(-3)$.	7	No
7.NS.2a-2	Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. a. Interpret products of rational numbers by describing real-world contexts.	None	2, 4	No
7.NS.2b-1	Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. b. Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If *p* and *q* are integers, then $-\left(\frac{p}{q}\right)=\frac{(-p)}{q}=\frac{p}{(-q)}$.	i) Tasks do not have a context. ii) Tasks are not computation tasks but rather require students to demonstrate conceptual understanding, for example by providing students with a numerical expression and requiring students to produce or recognize an equivalent expression.	7	No
7.NS.2b-2	Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. c. Interpret quotients of rational numbers by describing real-world contexts.	None	2, 4	No

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Evidence Statement Key	Evidence Statement Text	Clarifications	MP	Calculator
7.NS.2c	Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. c. Apply properties of operations as strategies to multiply and divide rational numbers.	i) Tasks do not have a context. ii) Tasks are not limited to integers. iii) Tasks may involve products and quotients of 2 or 3 rational numbers. iv) Tasks require students to compute a product or quotient, or demonstrate conceptual understanding for example by producing or recognizing an expression equivalent to a given expression. For example, given the product $\frac{(-8)(6)}{(-3)}$, the student might be asked to recognize or produce the equivalent expression $-\left(\frac{8}{3}\right)(-6)$.	7	No
7.NS.3	Solve real-world and mathematical problems involving the four operations with rational numbers.	i) Tasks are one-step word problems. ii) Tasks sample equally between addition/subtraction and multiplication/division. iii) Tasks involve at least one negative number. iv) Tasks are not limited to integers.	1, 4	No
7.EE.1	Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.	i) Tasks may involve issues of strategy, e.g., by providing a factored expression such as $y(3+x+k)$ and a fully expanded expression $3y+xy+ky$, and requiring students to produce or identify a new expression equivalent to both (such as $y(3+x)+yk$). ii) Tasks are not limited to integer coefficients.	7	No

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Evidence Statement Key	Evidence Statement Text	Clarifications	MP	Calculator
7.EE.3	Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole number, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. *For example: If a woman making $25 an hour gets a 10% raise, she will make an additional 1/10 of her salary an hour, or $2.50 for a new salary of $27.50. If you want to place a towel bar* $9\frac{3}{4}$ *inches long in the center of a door that is* $27\frac{1}{2}$ *inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation.*		5	Yes
7.EE.4a-1	Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. a. Solve word problems leading to equations of the form $px+q=r$ and $p(x+q)=r$, where *p*, *q*, and *r* are specific rational numbers.	i) Comparison of an algebraic solution to an arithmetic solution is not assessed here; this aspect of standard 7.EE.4a may be assessed on the Grade 7 PBA.	1, 2, 6, 7	Yes

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Evidence Statement Key	Evidence Statement Text	Clarifications	MP	Calculator
7.C.1.1	Base explanations/reasoning on the properties of operations. Content Scope: Knowledge and skills articulated in 7.NS.1 and 7.NS.2	i)Tasks should not require students to identify or name properties	1, 2, 3, 5, 6, 7	Yes
7.C.1.2	Base explanations/reasoning on the properties of operations. Content Scope: Knowledge and skills articulated in 7.EE.1	i)Tasks should not require students to identify or name properties	3, 6, 7	Yes
7.C.2	Base explanations/reasoning on the relationship between addition and subtraction or the relationship between multiplication and division. Content Scope: Knowledge and skills articulated in 7.NS.1 and 7.NS.2	None	1, 2, 3, 5, 6, 7	Yes
7.C.3	Base explanations/reasoning on a number line diagram (whether provided in the prompt or constructed by the student in her response). Content Scope: Knowledge and skills articulated in 7.NS.A	None	1, 2, 3, 5, 6, 7	Yes
7.C.4	Base explanations/reasoning on a coordinate plane diagram (whether provided in the prompt or constructed by the student in her response). Content Scope: Knowledge and skills articulated in 7.RP.A	None	2, 3, 5, 6	Yes
7.C.5	Given an equation or system of equations, present the solution steps as a logical argument that concludes with the set of solutions (if any). Content Scope: Knowledge and skills articulated in 7.EE.4a	None	1, 2, 3, 6, 7	Yes

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Evidence Statement Key	Evidence Statement Text	Clarifications	MP	Calculator
7.C.6.1	Construct, autonomously, chains of reasoning that will justify or refute propositions or conjectures. Content Scope: Knowledge and skills articulated in 7.RP.2	None	2, 3, 6	Yes
7.C.7.1	Present solutions to multi-step problems in the form of valid chains of reasoning, using symbols such as equal signs appropriately (for example, rubrics award less than full credit for the presence of nonsense statements such as $1+4=5+7=12$, even if the final answer is correct), or identify or describe errors in solutions to multi-step problems and present corrected solutions. Content Scope: Knowledge and skills articulated in 7.RP.3	None	1, 3, 6, 7, 8	Yes
7.C.7.2	Present solutions to multi-step problems in the form of valid chains of reasoning, using symbols such as equal signs appropriately (for example, rubrics award less than full credit for the presence of nonsense statements such as $1+4=5+7=12$, even if the final answer is correct), or identify or describe errors in solutions to multi-step problems and present corrected solutions. Content Scope: Knowledge and skills articulated in 7.NS.2d	None	1, 3, 6, 7, 8	Yes
7.C.7.3	Present solutions to multi-step problems in the form of valid chains of reasoning, using symbols such as equal signs appropriately (for example, rubrics award less than full credit for the presence of nonsense statements such as $1+4=5+7=12$, even if the final answer is correct), or identify or describe errors in solutions to multi-step problems and present corrected solutions. Content Scope: Knowledge and skills articulated in 7.NS.3	None	1, 3, 6, 7, 8	Yes

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Evidence Statement Key	Evidence Statement Text	Clarifications	MP	Calculator
7.C.7.4	Present solutions to multi-step problems in the form of valid chains of reasoning, using symbols such as equal signs appropriately (for example, rubrics award less than full credit for the presence of nonsense statements such as $1+4=5+7=12$, even if the final answer is correct), or identify or describe errors in solutions to multi-step problems and present corrected solutions. Content Scope: Knowledge and skills articulated in 7.EE.3	None	1, 3, 6, 7, 8	Yes
7.C.8	Construct, autonomously, chains of reasoning that will justify or refute propositions or conjectures. Content Scope: Knowledge and skills articulated in 6.NS.C, 6.EE.A, 6.EE.B	Tasks may have scaffolding if necessary in order to yield a degree of difficulty appropriate to grade 7.	3, 6	Yes
7.D.1	Solve multi-step contextual word problems with degree of difficulty appropriate to grade 7, requiring application of the grade 7 knowledge and skills articulated in the Evidence Statements on the PBA (excludes the Reasoning Evidence Statements which are those that start with 7.C).	Tasks may have scaffolding if necessary in order to yield a degree of difficulty appropriate to grade 7.	4, 1, 2, 5, 7	Yes
7.D.2	Solve multi-step contextual problems with degree of difficulty appropriate to grade 7, requiring application of knowledge and skills articulated in 6.RP.A, 6.EE.C, and 6.G	Tasks may have scaffolding if necessary in order to yield a degree of difficulty appropriate to grade 7.	4, 1, 2, 5, 7	Yes

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Evidence Statement Key	Evidence Statement Text	Clarifications	MP	Calculator
7.D.3	Micro-models: Autonomously apply a technique from pure mathematics to a real-world situation in which the technique yields valuable results even though it is obviously not applicable in a strict mathematical sense (e.g., profitably applying proportional relationships to a phenomenon that is obviously nonlinear or statistical in nature). Content Scope: Grade 7 knowledge and skills articulated in the Evidence Statements on the PBA (excludes the Reasoning Evidence Statements which are those that start with 7.C).	Tasks may have scaffolding if necessary in order to yield a degree of difficulty appropriate to grade 7.	4, 1, 2, 5, 7	Yes
7.D.4	Reasoned estimates: Use reasonable estimates of known quantities in a chain of reasoning that yields an estimate of an unknown quantity. Content Scope: Grade 7 knowledge and skills articulated in the Evidence Statements on the PBA (excludes the Reasoning Evidence Statements which are those that start with 7.C).	Tasks may have scaffolding if necessary in order to yield a degree of difficulty appropriate to grade 7.	4, 1, 2, 5, 7	Yes