NJSLA Grade 7 Mathematics

Lesson 2: Pre-Assessment of Type 1 Questions

Rationale

- In order to ensure that students perform at their personal best, students need to understand the format of the items associated with each domain and develop efficient strategies for responding to each item. This pre-assessment provides instructors with a view of students' content knowledge and ability to apply this knowledge in the test setting.
- This is a CLASSROOM assessment with the purpose of gathering information to gauge student strengths and weaknesses based on content, perception and analyzing processes. The goal of this lesson is to inform instruction and is not considered a District Benchmark Assessment.

Goal

- To identify items that present the greatest challenge for each student and the class as a whole

Objective

- Students will complete the Pre-Assessment of Type I Questions that represents the 5 CCSS domains and various styles of questions.

Materials

- Pre-Assessment of Type I Questions- Attached
- ***Pre-Assessment of Type I Questions Student Profile***
- Class Folder Labeled: Lesson 2: Pre-Assessment of Type I Questions. (At the end of the lesson, place the class papers in the folder. If students used graph paper, please have students attach the graph paper to their pre-assessments.)

Procedures for the Pre-Assessment of Type I Questions

- Be sure all students have a pencil, graph paper, and a pre-assessment. Highlighters can be provided. Four-function calculator can be provided.
- Place tests face-down on desks.
- Remind the students of test-taking posture and etiquette, such as sitting up straight and using EVERY available second.
- Provide a reasonable amount of time in which most students can complete the task.

- If a student is spending too much time on any given item, encourage him or her to complete the items with which he or she is confident and then return to the items that are less familiar later.
- At the conclusion, ask for student feedback and reactions to taking the pre-assessment.

Teacher & Teachers' Aide Observations During the Pre-Assessment

Be sure to circulate the classroom and monitor students while they are completing the pre-assessment.

- Which students are using their time wisely?
- Which students seem alert with good posture and energy?
- Which students are skipping items and need to be reminded to complete the skipped item?
- Which students skipped an item but completed the item at a later time?
- Which students are spending too much time on one particular item?
- Which students seem to be making small mathematical errors that could easily be fixed with a mini-lesson?

Assessment or Check for Understanding

- Use the answer key to score the students responses. Look for patterns of errors.

Follow-Up

- In order to initiate students' understanding of any type of mathematics item, whenever students are presented with an item, ask them to identify what kind of question it represents (Ratio and Proportional Relationships, The Number System, Expressions and Equations, Geometry, and Statistics and Probability).
- In order to initiate students' understanding of any type of mathematics item, whenever students are presented with an item, ask them to identify what style of question it represents (selected response items-select all that apply, category sort, menu choices, and constructed-response items-create the answer).

Pre-Assessment of Type I Questions Student Profile

Goal

- As the data is entered on the chart, teachers and students will be able to view student and class strengths and weaknesses. The Pre-assessment of Type I Questions Student Profile provides a visual "snapshot" of students' initial performance as it pertains to strategies that foster and support student success with taking the NJSLA.

Procedures

- List the students for each class (A pre-assessment student profile is necessary for each class.)
- For each student, a plus (+) sign or negative (-) sign is placed in each column.

Pre-assessment Student Profile Key Terms Briefly Explained:

Time: Which students lose time determining answers?

Approach: Which student relies on one approach too frequently? Did the student use mathematical models, methods and strategies from the Common Core State Standards?

Skill: Look for patterns of errors; do not simply comment, "Made a mistake." Note specific behaviors such as calculation errors.

Content: Which students just don't know a particular content area? (e.g. absolute value, prime numbers, translations)

Skipping: Which students are skipping tough items and returning to them later?

Plugging: When possible, are students taking the answer choices and plugging them into the question?

Comments: Are there any special or specific thoughts for a student? e.g. student frustration, low energy, lack of focus, completed assessment with ease, confident Note: Comments aren't necessary for every student.

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Pre-Assessment of Type I Questions Student Profile

Students	Time	Approach	Skill	Content	Skipping	Plugging	Comments

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Lesson 2: Implement the Pre-Assessment of Type I Questions

Calculator Activated

7.NS.2

1. Select **all** the apply. If the opposite of 3 is divided by a negative integer, the quotient will be:

- ☐ A. greater than negative 3.
- ☐ B. less than negative 3.
- ☐ C. a positive number.
- ☐ D. a negative number.
- ☐ E. zero.

7.RP.2

2. A student collected and recycled aluminum cans, earning 25 cents for each can. She collected a total of $14. In the equation, c represents the number of cans collected. Complete the equation.

Choose
0.25
14

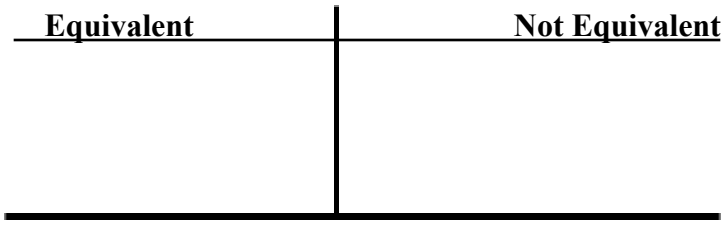
+
-
x

Choose
0.25
14

c =

7.E.2

3. Which expressions are equivalent to or not equivalent to $6y-18$?



6(y – 3) | 6(y – 18) | 3(2y – 6) | 3(3y – 15) | 2(3y – 9) | 6(y – 12)

7.EE.3

4. A man spent $12 for lunch and left a tip for the waiter. The tip was 18% of the cost of lunch. How much was the tip? How much did the man spend altogether, including the tip?

Tip **Altogether**

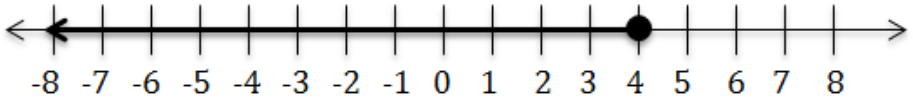
Choose
$14.00
$14.16
$16.18

Choose
$2.00
$2.16
$4.18

7.EE.4

5. Seema earns $8 per hour babysitting and has already earned $28 this month. She would like to earn more than $60 by the end of the month. Which graph correctly shows the solution set for the number of hours she needs to work?

A.



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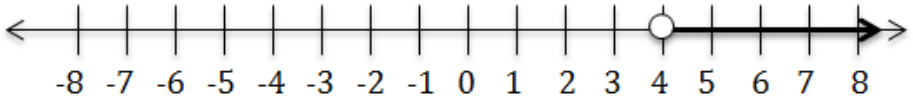
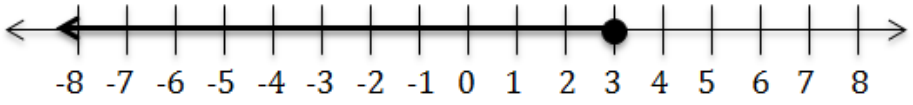
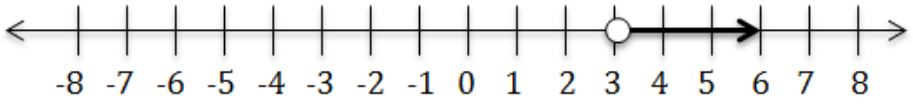


C.



D.



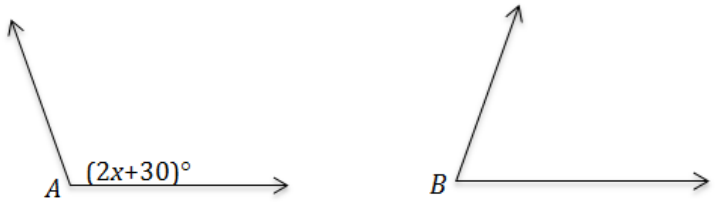
7.EE.3

6. Logan needs $\frac{1}{6}$ yard of ribbon to decorate each side of a square picture frame. The ribbon shop only sells ribbon by the $\frac{1}{2}$ yard. What is a **reasonable** amount of ribbon Logan should purchase in order to decorate all sides of the frame?

- ☐ A. $\frac{1}{2}$ yard
- ☐ B. 1 yard
- ☐ C. $1\frac{1}{2}$ yards
- ☐ D. 2 yards

7.G.5

7. In the diagram below, the angles are supplementary.



If m∠B=70°, what is the value of x? What is the m∠A ?

Value of x **m∠A**

7.G.4

8. Select the correct formula and solve. If a circle has a radius of 5 ft, find the approximate area of the circle.

Formula **Area**

Choose
- 5π ft^2
- 10π ft^2
- 25π ft^2
- 50π ft^2

Choose
- $A = \pi r^2$
- $A = \pi d^2$
- $A = \pi d$

7.SP.2

9. A scientist randomly caught 45 striped bass from a lake, tagged them, and released them back into the lake. One month later, the scientist caught 30 of the striped bass and 6 of them were tagged. Create a proportion to find the **best** estimate of the striped bass population in the lake.

$\frac{\square}{\square} = \frac{\square}{\square} = \square$ is the estimated population of striped bass

7.SP.5

10. A student has 12 coins. Two of the coins are dimes and the rest are pennies. If the student takes one coin out of her pocket, what is the likelihood that it will be a penny instead of a dime?

Choose

unlikely
equally likely
more likely
certain

P(penny) = ____ **P(dime) =** ____ **Likelihood**

7.SP.3

11. Basketball scores for two teams are listed in the chart below.

Blue Team	Red Team
34	8
0	27
59	45
29	40
42	12
22	0

Based on the information in the chart, which statements are true?

- ☐ A. The Blue Team has a lower mean score than the Red Team.
- ☐ B. The Red Team has a higher range of scores than the Blue Team.
- ☐ C. The Red Team has a lower median score than the Blue Team.
- ☐ D. The Blue Team has a greater variability of scores than the Red Team.
- ☐ E. The Red Team has a greater variability of scores than the Blue Team.

7.SP.6

12. A bag contains 60 red marbles and 140 green marbles. When pulling a marble from the bag and replacing it 100 times, which phrase **best** describes the number of times that the marble will be red?

Approximately ____ times

Lesson 2: Implement the Pre-Assessment of Type I Questions

ANSWER KEY

1. A C
2. 0.25 x c = 14
3. $6y - 18$

Equivalent	Not Equivalent
6(y – 3)	6(y – 18)
3(2y – 6)	3(3y – 15)
2(3y – 9)	6(y – 12)

4. Tip $2.16 Altogether $14.16

5. B

6. B

7. **Value of x** 40 **m∠A** 110°

8.

Formula	Area
$A = \pi r^2$	25π ft^2

9. $\frac{6}{45} = \frac{30}{225} = 225$ is the estimated population of striped bass

Variations of the proportion are possible.

10. **P(penny) =** 83 1/3 % **P(dime) =** 16 2/3 % **Likelihood**

more likely
unlikely
equally likely
more likely
certain

11. C D

12. 30