CAHSEE Mathematics - Chapter 3

Notes To The Teacher

Using the Number Sense (NS) Chapter

14 problems on the CAHSEE Math

Number sense is a review of grade seven mathematics. The main focus is on integers, fractions, decimals and percents.

Teaching Tip 1: Review the Chapter's content with each student making sure they pay attention to the most heavily tested concepts. We have categorized them below based on how many test items appear on CAHSEE math.

As you review the content areas below, have students refer back to their study plan to see if they included the heavily tested standards. Some students may wish to revise their study plan, so allow wait time for student to update their plans.

3 test items :

- 7 NS 1.2 - Add, subtract, multiply, and divide rational numbers (integers, fractions, and terminating decimals) and take positive rational numbers to whole-number powers.

2 test items:

- 7NS 1.3 - Convert fractions to decimals and percents and use these representations in estimations, computations, and applications.
- 7 NS 1.7 - Solve problems that involve discounts, markups, commissions, and profit, and compute simple and compound interest.

1 test item :

- 7 NS 1.1 Read, write, and compare rational numbers in scientific notation (positive and negative powers of 10) with approximate numbers using scientific notation
- 7 NS 1.6 Calculate the percentage of increases and decreases of a quantity.

***Note:** Although the standards below have 1 item each, please note they all fall under Standard 2.0. Therefore there are **5 questions** that fall under the category of "Students use exponents, powers, and roots, and use exponents in working with fractions." Therefore, students should practice all of the problems below. Therefore, encourage students to add these problems to their study plan if they have not done so already.

- **2.1 Understand negative whole-number exponents. Multiply and divide expressions involving exponents with a common base.**
- **2.2 Add and subtract fractions by using factoring to find common denominators.**
- **2.3 Multiply, divide, and simplify rational numbers by using exponent rules.**

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- **2.4 Use the inverse relationship between raising to a power and extracting the root of a perfect square integer; for an integer that is not square, determine without a calculator the two integers between which its square root lies and explain why.**
- **2.5 Understand the meaning of the absolute value of a number; interpret the absolute value as the distance of the number from zero on a number line; and determine the absolute value of real numbers.**

Teaching Tip 2: Before solving any problems, students go through the practice problems and circle the problems from their study plan. The standard appears in the right corner of each practice problem. Students should solve the practice problems from their study plan first. If the CAHSEE review class is taught over a period of time, I recommend that students do 5 problems at a time in lieu of doing all of the problems at one time. When the 5 problems are done, students do the Test Taking Tips activity with those problems.

Teaching Tip 3: Important vocabulary appears in bold. Before solving the problems, students should look at the practice problems and make a list of all bold words that are unfamiliar. Students can then look for those words in the glossary.

Practice Problems - Number Sense

1. $\frac{29}{30} - \left(\frac{1}{6} + \frac{3}{10}\right)$

A. $\frac{1}{2}$

B. $\frac{5}{6}$

C. $\frac{9}{10}$

D. $\frac{25}{14}$

NS1.2 (3 items)

2. James uses $\frac{5}{8}$ of a cup of cornflakes per serving of breakfast. How many cups of cornflakes should he use to make breakfast for 4 servings?

A. $\frac{2}{5}$

B. 5

C. $2\frac{1}{2}$

D. 10

NS1.2 (3 items)

3. $\left(\frac{3}{4}\right)^3 =$

A. $\frac{9}{4}$

B. $\frac{1}{4}$

C. $\frac{27}{64}$

D. $\frac{27}{4}$

NS1.2 (3 items)

4. Seven members of band are buying new outfits. Jackets cost $39 each, a pair of shoes cost $49, a shirt cost $14 and a pair of jeans cost $28. What is the total cost for all the outfits?

A. $130

B. $137

C. $910

D. $1000

NS1.2 (3 items)

5. Frank got 16 questions right on a 20 item test. What **percent** of the questions did Frank get right?

A. 16%

B. 20%

C. 75%

D. 80%

NS1.3 (2 items)

6. Mary invested $300 at 6% **simple interest** for 4 years. How much **interest** did Mary earn?

A. $18

B. $24

C. $72

D. $96

NS1.7 (2 items)

7. If $|x - 3| = 7$. What is the value of x?

A. 3, -3

B. 4, -10

C. 10, -10

D. 10, -4

NS2.5 (1 item)

8. What is the absolute value of $-\frac{2}{3}$?

A. $\frac{3}{2}$

B. $-\frac{3}{2}$

C. $\frac{2}{3}$

D. $-\frac{2}{3}$

NS2.5 (1 item)