Jakarta International School

7th Grade

Practice Test - BLACK

Operations with Fractions

Name: _____

Date: _____

Score: $\frac{\quad}{30}$

Clearly SHOW or EXPLAIN how you arrive at ALL your answers !!!

1. A college class has exactly enough students to form eight equal rows. On Monday, a student is absent, and the professor is able to seat the students into five equal rows. On Tuesday, two students are absent, and the professor can seat the students into nine equal rows. What is the least possible number of students in the class? **(2 pts)**

2. Using the following three clues, can you figure out which integer I am? (1) If I am not a multiple of 4, then I am between 60 and 69. (2) If I am a multiple of 3, I am between 50 and 59. (3) If I am not a multiple of 6, I am between 70 and 79. What integer am I? **(2 pts)**

3. What is the sum of the integers K such that $\frac{k}{21}$ is greater than $-\frac{2}{3}$ and less than $-\frac{2}{7}$? **(2 pts)**

4. Let a and b represent nonzero integers. Find a rational number of the form $\frac{a}{b}$ so that $2.\overline{3} < \frac{a}{b}$ and $\frac{a}{b} < 2\frac{7}{20}$. (2 pts)

5. Write the decimal $0.3\overline{21}$ as a fraction. (2 pts)

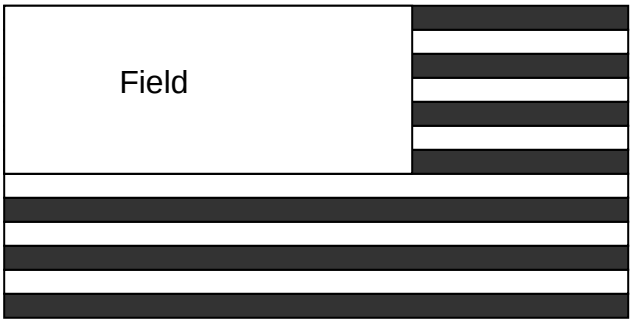
6. Find the indicated square root: $\sqrt{1024}$ = (2 pts)

7. Use the divide and average method to find an approximation for the square root (to the nearest hundredth): $\sqrt{250}$ (2 pts)

8. **Explain**. What is the difference between a rational and irrational number? Give an example of each *using radical symbols.* (2 pts)

9. Kevin spent $\frac{4}{25}$ of his money on a magazine, $\frac{3}{10}$ of it on a book, $\frac{2}{3}$ of the remainder on a dictionary. If he spent $3 more on the dictionary than on the book, how much money did he have at first? (2 pts)

10. The length of the field on the flag diagrammed below is 2/3 the length of the entire flag (drawing not exactly to scale). There are seven dark stripes and 6 white stripes. Though the stripes differ in length, they are of equal width. What fractional part of the flag's area is represented by the shaded stripes? Express your answer as a common, simplified fraction. (2 pts)



11. Calculate the sum of the geometric series $1+\left(\frac{1}{4}\right)+\left(\frac{1}{4}\right)^2+\left(\frac{1}{4}\right)^3+\ldots$ Express your answer as a common fraction. (2 pts)

12. If $\frac{2}{3}$ of a ton of hay costs $\frac{4}{5}$ of an eagle, how many eagles will $\frac{1}{6}$ of a ton cost? What is the number of eagles in the answer to this problem? Express your answer as a common fraction. (2 pts)

13. If b is negative, what is the value of b in the geometric sequence 25, a, 56.25, b? Express your answer as a common fraction. (2 pts)

14. Simplify: $\frac{x^2-2x-3}{x+1} \bullet 5(x-3)^{-1}$ (2 pts)

15. David bought $\frac{2}{5}$ kg of vegetables, $\frac{3}{8}$ kg of prawns and $\frac{1}{4}$ kg of meat for $13.20 altogether. He bought the meat for $5 per kg. If he had not bought the veggies, but another $\frac{3}{8}$ kg of prawns instead, he would have spent about $2.15 more altogether. How much did he pay for each kg of veggies? (2 pts)