Daily Math Court (Student): Module 1 Lesson 1

MODULE ONE: SCHOOL BULLYING AND HARASSMENT

Lesson 1: Case of the Damaged Painting: Working With Fractions, Decimals and Percentages

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1.0 Lesson Overview and Learning Objectives

This lesson will explore the practical application of fractions, decimals, and percentages in understanding real-life scenarios, particularly those involving school bullying and harassment. By connecting these mathematical concepts to relatable situations, learners will gain a deeper understanding of their significance beyond the classroom. We will also delve into a simulated court case, applying our mathematical skills as expert witnesses to determine financial outcomes.

Learning Objectives:

LO1: (a) Use calculator to convert among fractions, percentages, decimals.

(b) Calculate a fraction, percentage and decimal part of a given number.

1.1 Math Brief #1

Using A Calculator To Convert Among Fractions, Percentages, Decimals.
This objective focuses on understanding that fractions, decimals, and percentages are simply different ways of representing parts of a whole. A calculator can help us quickly switch between these forms.

Example 1: Converting a Fraction to a Decimal and Percentage.
Imagine you ate 1/4 of a pizza. To express this as a decimal, you would divide the numerator (1) by the denominator (4): $1 \div 4 = 0.25$. To convert this decimal to a percentage, you multiply by 100: $0.25 \times 100 = 25\%$. So, 1/4 of the pizza is 0.25 as a

decimal and 25% as a percentage.

Example 2: Converting a Percentage to a Decimal and Fraction.
Suppose a shop offers a 30% discount. To convert 30% to a decimal, you divide by 100: 30 ÷ 100 = 0.30. To convert this decimal to a fraction, you can write it as 30/100 and then simplify by dividing both the numerator and denominator by their greatest common divisor (10): 30/100 = 3/10.

Example 3: Converting a Decimal to a Percentage and Fraction.
If your test score was 0.85, to get the percentage, multiply by 100: 0.85 × 100 = 85%.
To express 0.85 as a fraction, write it as 85/100 (since 0.85 is 85 hundredths) and simplify by dividing both by 5: 85/100 = 17/20.

Calculate a fraction, percentage and decimal part of a given number.
This objective involves finding a portion of a total quantity using fractions, decimals, or percentages. This is often used to determine costs, amounts, or proportions.

Example 1: Finding a Fraction of a Number.
If you have 24 candies and give away 1/3 of them, to find out how many you gave away, you multiply 1/3 by 24: (1/3) × 24 = 24 ÷ 3 = 8 candies.

Example 2: Finding a Percentage of a Number.
A survey found that 60% of 500 students participate in after-school clubs.
To find the number of students who participate, convert 60% to a decimal (0.60) and multiply by the total number of students: 0.60 × 500 = 300 students.

Example 3: Finding a Decimal Part of a Number.
You have $750 and decide to spend 0.2 of it on new books.
To find how much you spent, you multiply 0.2 by $750: 0.2 × $750 = $150.

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1.2. Case Study (Fictitious)

Summary of Facts:

Alton, a promising young artist, brought his prized painting to a school art exhibition. Tragically, during a period of ongoing tension, Keisha, known as a school bully, intentionally damaged Alton's artwork. The painting was independently valued at US$23,525. Investigations confirmed that 64% of the painting's total value was directly compromised by Keisha's actions.

Alton's legal representation, seeking full restitution and accountability, initially demanded that Helen, Keisha's mother, pay a sum equivalent to 150% of the damaged value of the painting. In addition to this, Alton sought reimbursement for his incurred legal fees, amounting to US$1,650.

During the contentious proceedings, Judge Stern carefully considered the arguments and evidence presented. Ultimately, the Judge ordered Helen to pay Alton 135% of the damaged value of the painting. Furthermore, regarding legal fees, the Judge ruled that Helen must cover three-quarters (3/4) of the legal fees Alton incurred. In a gesture aimed at encouraging prompt resolution, Judge Stern included a special condition: a 5% discount would be applied to the total ordered amount if payment was made within 10 days from the date of the verdict. Helen, perhaps seeking to benefit from this reduction or to swiftly close the matter, made the full payment exactly 4 days after the verdict was delivered.

Your Role of Expert Witness:

To assist Judge Stern in delivering a precise and equitable judgment, you, as the expert witness in mathematics, are tasked with the following calculations:

a. Calculate the exact total amount that Helen should pay, considering the discount for timely payment.

b. Determine the precise difference between the total amount that Alton had initially demanded and the final amount that he actually received from Helen.

1.3 Detailed Math Solution to Case Study #1

View the following You Tube Video after attempting the questions for Case Study #1.

Watch YouTube Solutions to Case #1

2.0 Legal Principles Relating to the Case

In various countries, including Trinidad and Tobago, parents or guardians can be held liable for fines, damages, or costs incurred due to offences committed by a child under their responsibility, particularly if the court determines that the child's wrongdoing resulted from parental neglect or if it is deemed in the best interest of justice for the parent to pay.

3.0 Legal Literacy - Dos and Don'ts for

Dos:

1. Do understand that parents can be held financially responsible for damages caused by their minor children, especially in cases of negligence or intentional harm.
2. Do seek legal advice if your property is damaged or if you are accused of causing damage, to understand your rights and obligations.

Don'ts:

1. Do not assume that children are always immune to consequences for their actions, as parents may face legal and financial repercussions.
2. Do not attempt to resolve disputes involving significant damages or legal complexities without consulting a qualified legal professional.

1.6. Interactive Quiz

Click the link below to do the Interactive Quiz.

Take the Quiz

End of Lesson 1 – Congratulations!

Well done on completing this lesson so far! Keep up the great work as you progress through the remaining lessons. Remember, successfully completing all the interactive tests at the end of each lesson is key to mastering the material. Once you've finished the entire module, you'll be eligible to apply for your well-deserved **Certificate of Participation**, a testament to your dedication and learning journey with The Math Court!

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