

Exercises 1.1.:

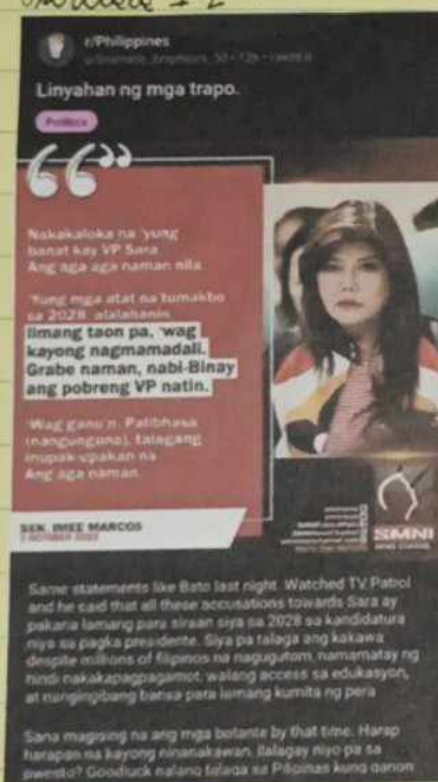
1.) Some units that can be focused on the development of 21st century skills are:

- Grade 7 (Patterns & Algebra; Statistics & Probability)
- Grade 8 (Statistics & Probability; Geometry)
- Grade 9 (Geometry, Statistics & Probability; Patterns & Algebra)
- Grade 10 (Patterns and Algebra; Geometry)

2.) All grade levels that involve Patterns and Algebra, and Geometry, because it utilizes the use of ICT tools especially on the given learning competencies that requires application and external use of ICT tools concerning math.

3.) In Grade 10 Geometry, in postulates and theorems of triangles, a teacher can provide an activity where students can prove a triangle base on its given and prove and proof. Their learnings about postulates and triangles is very essential.

Exercises 1.2.:



→ The statement given by Sen. Imee Marcos is very infuriating. The way she said it feels like it is very known to the Filipinos who criticize the current issue that she defended the vice president aiming to allocate a huge amount of money, estimating up to almost half a billion pesos.

→ The issue of corruption is very condemning than ever before. The confidential funds for a department whose aim is to give quality education, is far beyond comprehension. The logical sense that even the government officials cannot oppress is her preparations for running presidential elections using the fund disguise confidential.

2) Create a Presentation:

- Prepare a detailed presentation that covers the following topics:
 - Introduction to Fibonacci numbers and their history.
 - The Fibonacci sequence and its recursive nature.
 - Properties and patterns within the Fibonacci sequence.
 - Real-world application and examples.
 - Visual representations of Fibonacci numbers in nature and art.
- Include images, diagrams, and interactive elements to make the presentation engaging.

3) Interactive Activities:

- Develop interactive activities or quizzes related to Fibonacci numbers to engage the audience and reinforce key concepts.

4) Presentation Delivery:

- Present the project to fellow students in a classroom setting or through an online platform.
- Encourage questions and discussions to promote a deeper understanding of the topic.

5) Resources and References:

- Provide a list of resources and references for students who want to explore the topic further.

6) Evaluation:

- Collect feedback from fellow students on the effectiveness of the presentation and make improvements if needed.

7) Reflect and Share:

- Reflect on the experience and what you've learned throughout the project.
- Share your project and presentation materials with the broader school community, such as through school website.

Exercises 2.1:

1.) Project-based learning focuses on the development of a lengthy project or product that deals with a challenging issue. Over a long period of time, perhaps several weeks or months, students work on a project.

Problem-based learning centers on specific problems or scenarios that students must solve or address. These problems are often presented at the beginning of the learning process.

2.) Math problems are more complex, open-ended, and required higher-order thinking, and often involving real world applications. They encourage students to think critically and creatively. On the other hand, math exercises are simpler, with a focus on practically specific skills or procedures. They aim to build fluency in mathematical concepts and typically have a single correct approach.

3. ii.) Fibonacci numbers are a fascinating sequence of numbers that have a wide range of applications in various fields, including mathematics, science, art, and nature.

Project Title: Exploring Fibonacci Numbers: Nature's Hidden Pattern

Project Goals: 1.) To deepen my understanding of Fibonacci numbers, their properties, and their significance in various domains.

2.) To create an engaging and informative presentation to share this knowledge with fellow students.

Project Steps:

1.) Research and Study

→ Begin by researching the history of Fibonacci numbers, including their origin, and the work of Leonardo of Pisa.

2.) Explore the mathematical properties of the Fibonacci sequence, such as recursive formula, closed-form expression, and the relationship between consecutive Fibonacci numbers.

→ Investigate real-world applications of Fibonacci numbers, such as their occurrence in nature, and their use in computer science and algorithms.

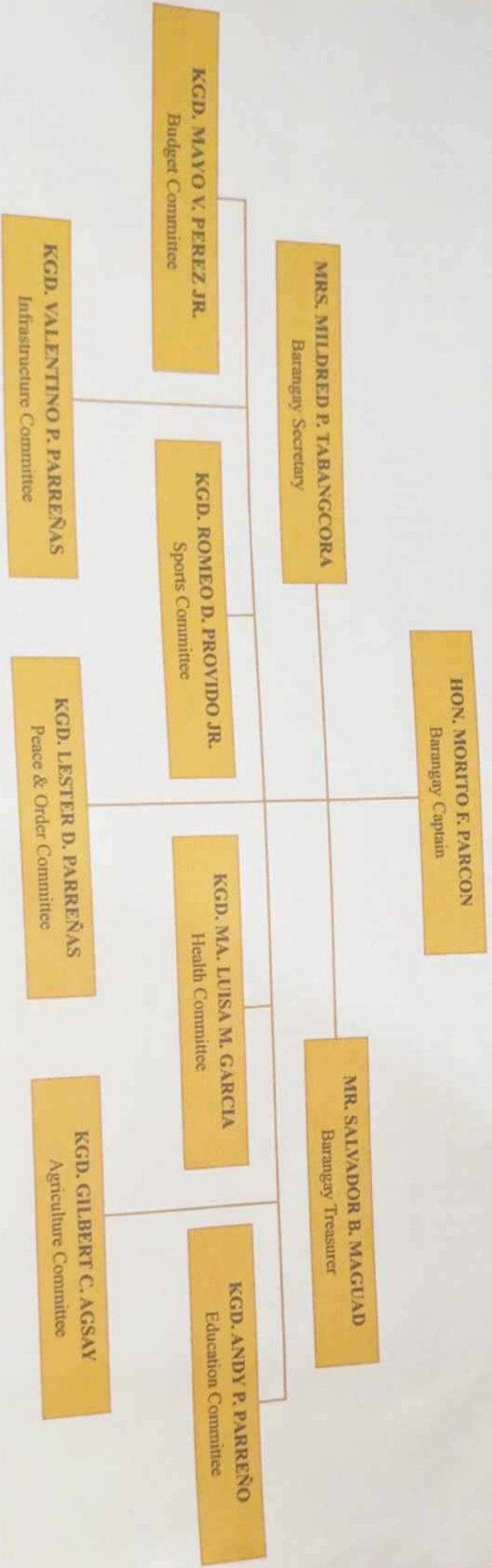
Exercise 2-2:

7) To determine the point from which a soccer player should shoot to have the best chance of making a goal, we can use some basic geometry and principles of angles. The player should aim to maximize the angle formed by himself and the two goal posts because a larger angle provides a larger target to aim for.

He should shoot from the midpoint between the two goal posts to have the best chance of making a goal. This point maximizes the angle formed by the player and the two goalposts, providing a larger target for a successful shot on goal.

Exhibit 2.1:

Republic of the Philippines
Province of Iloilo
Municipality of Pototan
Barangay Rumbang
Barangay Rumbang Government Officials
Organizational Chart



27/04/2020	PH	Philippines	WPRO	285	7579	7	501
28/04/2020	PH	Philippines	WPRO	198	7777	10	511
29/04/2020	PH	Philippines	WPRO	181	7958	19	530
30/04/2020	PH	Philippines	WPRO	254	8212	28	558
01/05/2020	PH	Philippines	WPRO	276	8488	10	568
02/05/2020	PH	Philippines	WPRO	284	8772	11	579
03/05/2020	PH	Philippines	WPRO	156	8928	24	603
04/05/2020	PH	Philippines	WPRO	295	9223	4	607
05/05/2020	PH	Philippines	WPRO	262	9485	16	623
06/05/2020	PH	Philippines	WPRO	199	9684	14	637
07/05/2020	PH	Philippines	WPRO	320	10004	21	658
08/05/2020	PH	Philippines	WPRO	339	10343	27	685
09/05/2020	PH	Philippines	WPRO	120	10463	11	696
10/05/2020	PH	Philippines	WPRO	147	10610	8	704
11/05/2020	PH	Philippines	WPRO	184	10794	15	719
12/05/2020	PH	Philippines	WPRO	292	11086	7	726
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14/05/2020	PH	Philippines	WPRO	268	11618	21	772
15/05/2020	PH	Philippines	WPRO	258	11876	18	790
16/05/2020	PH	Philippines	WPRO	215	12091	16	806
17/05/2020	PH	Philippines	WPRO	214	12305	11	817
18/05/2020	PH	Philippines	WPRO	208	12513	7	824
19/05/2020	PH	Philippines	WPRO	205	12718	7	831
20/05/2020	PH	Philippines	WPRO	224	12942	6	837
21/05/2020	PH	Philippines	WPRO	279	13221	5	842
22/05/2020	PH	Philippines	WPRO	213	13434	4	846
23/05/2020	PH	Philippines	WPRO	163	13597	11	857
24/05/2020	PH	Philippines	WPRO	180	13777	6	863
25/05/2020	PH	Philippines	WPRO	258	14035	5	868
26/05/2020	PH	Philippines	WPRO	284	14319	5	873
27/05/2020	PH	Philippines	WPRO	350	14669	13	886
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29/05/2020	PH	Philippines	WPRO	539	15588	17	921
30/05/2020	PH	Philippines	WPRO	1046	16634	21	942
31/05/2020	PH	Philippines	WPRO	590	17224	8	950
01/06/2020	PH	Philippines	WPRO	862	18086	7	957
02/06/2020	PH	Philippines	WPRO	552	18638	3	960
03/06/2020	PH	Philippines	WPRO	359	18997	6	966
04/06/2020	PH	Philippines	WPRO	751	19748	8	974
05/06/2020	PH	Philippines	WPRO	634	20382	10	984
06/06/2020	PH	Philippines	WPRO	244	20626	3	987
07/06/2020	PH	Philippines	WPRO	714	21340	7	994
08/06/2020	PH	Philippines	WPRO	555	21895	9	1003
09/06/2020	PH	Philippines	WPRO	579	22474	8	1011
10/06/2020	PH	Philippines	WPRO	518	22992	6	1017
11/06/2020	PH	Philippines	WPRO	740	23732	10	1027
12/06/2020	PH	Philippines	WPRO	440	24172	9	1036
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14/06/2020	PH	Philippines	WPRO	606	25391	23	1075
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19/06/2020	PH	Philippines	WPRO	561	27798	8	1116
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24/06/2020	PH	Philippines	WPRO	1150	31825	9	1186

25/06/2020	PH	Philippines	WPRO	466	32291	18	1204
26/06/2020	PH	Philippines	WPRO	776	33067	8	1212
27/06/2020	PH	Philippines	WPRO	998	34065	12	1224
28/06/2020	PH	Philippines	WPRO	737	34802	12	1236
29/06/2020	PH	Philippines	WPRO	647	35449	8	1244
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exercice 3.2.:

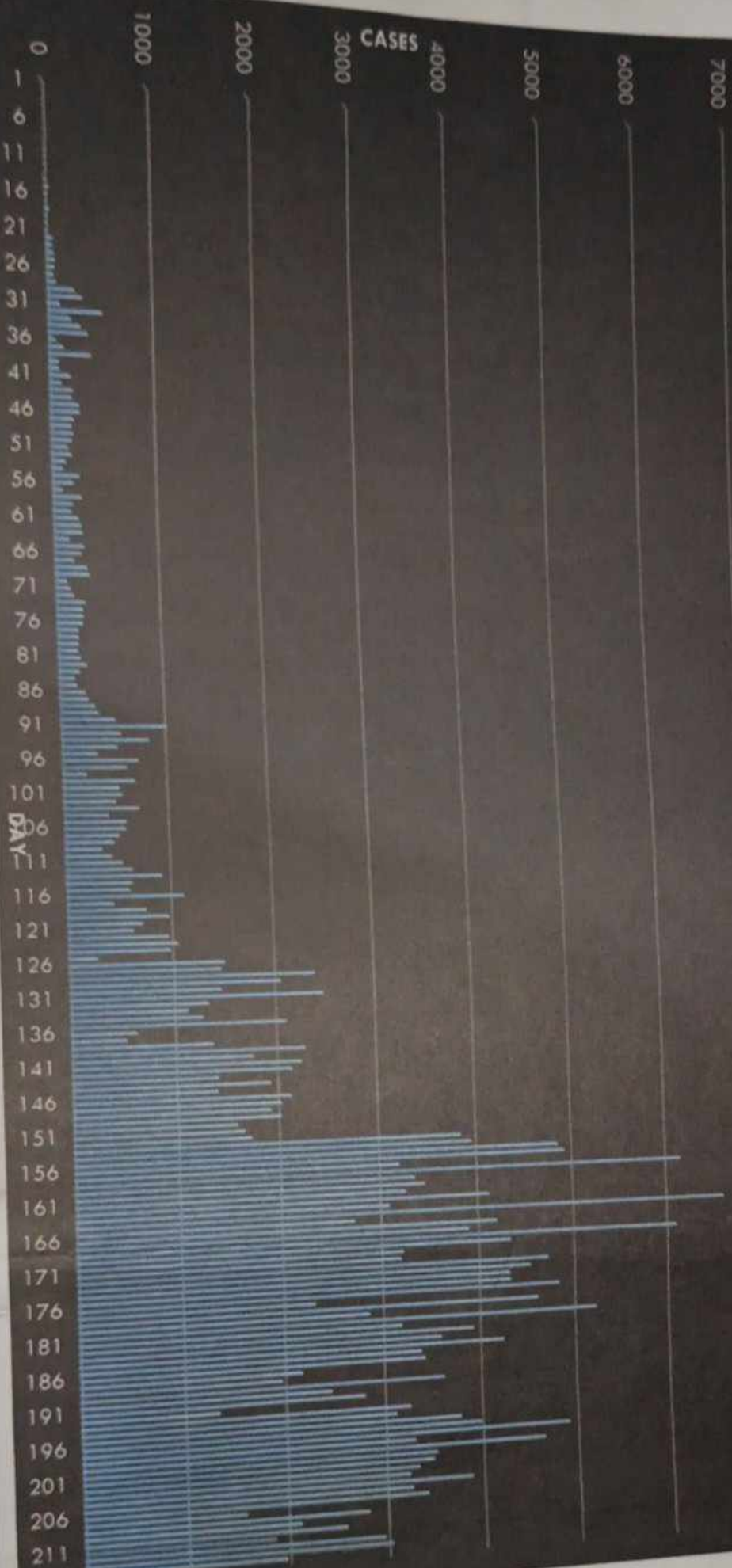
Date_reported	Country_code	Country	WHO_region	New_cases	Cumulative_cases	New_deaths	Cumulative_deaths
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03/03/2020	PH	Philippines	WPRO	0	3	0	1
04/03/2020	PH	Philippines	WPRO	0	3	0	1
05/03/2020	PH	Philippines	WPRO	0	3	0	1
06/03/2020	PH	Philippines	WPRO	0	3	0	1
07/03/2020	PH	Philippines	WPRO	2	5	0	1
08/03/2020	PH	Philippines	WPRO	1	6	0	1
09/03/2020	PH	Philippines	WPRO	4	10	0	1
10/03/2020	PH	Philippines	WPRO	10	20	0	1
11/03/2020	PH	Philippines	WPRO	13	33	0	1
12/03/2020	PH	Philippines	WPRO	16	49	1	2
13/03/2020	PH	Philippines	WPRO	3	52	3	5
14/03/2020	PH	Philippines	WPRO	12	64	3	8
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18/03/2020	PH	Philippines	WPRO	45	187	5	17
19/03/2020	PH	Philippines	WPRO	15	202	0	17
20/03/2020	PH	Philippines	WPRO	15	217	1	18
21/03/2020	PH	Philippines	WPRO	13	230	1	19
22/03/2020	PH	Philippines	WPRO	77	307	6	25
23/03/2020	PH	Philippines	WPRO	73	380	0	25
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25/03/2020	PH	Philippines	WPRO	90	552	2	35
26/03/2020	PH	Philippines	WPRO	84	636	3	38
27/03/2020	PH	Philippines	WPRO	71	707	7	45
28/03/2020	PH	Philippines	WPRO	96	803	9	54
29/03/2020	PH	Philippines	WPRO	272	1075	14	68
30/03/2020	PH	Philippines	WPRO	343	1418	3	71
31/03/2020	PH	Philippines	WPRO	128	1546	17	88
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02/04/2020	PH	Philippines	WPRO	227	2311	8	96
03/04/2020	PH	Philippines	WPRO	322	2633	11	107
04/04/2020	PH	Philippines	WPRO	385	3018	29	136
05/04/2020	PH	Philippines	WPRO	76	3094	8	144
06/04/2020	PH	Philippines	WPRO	152	3246	8	152
07/04/2020	PH	Philippines	WPRO	414	3660	11	163
08/04/2020	PH	Philippines	WPRO	104	3764	14	177
09/04/2020	PH	Philippines	WPRO	106	3870	5	182
10/04/2020	PH	Philippines	WPRO	206	4076	21	203
11/04/2020	PH	Philippines	WPRO	119	4195	18	221
12/04/2020	PH	Philippines	WPRO	233	4428	26	247
13/04/2020	PH	Philippines	WPRO	220	4648	50	297
14/04/2020	PH	Philippines	WPRO	284	4932	18	315
15/04/2020	PH	Philippines	WPRO	291	5223	20	335
16/04/2020	PH	Philippines	WPRO	230	5453	14	349
17/04/2020	PH	Philippines	WPRO	207	5660	13	362
18/04/2020	PH	Philippines	WPRO	218	5878	25	387
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20/04/2020	PH	Philippines	WPRO	172	6259	12	409
21/04/2020	PH	Philippines	WPRO	200	6459	19	428
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23/04/2020	PH	Philippines	WPRO	111	6710	9	446
24/04/2020	PH	Philippines	WPRO	271	6981	16	462
25/04/2020	PH	Philippines	WPRO	211	7192	15	477
26/04/2020	PH	Philippines	WPRO	102	7294	17	494

Exhibit 3.3

COVID-19 DATA IN PHILIPPINES' DAILY CASES

SOURCE: WHO

COVID-19 Cases in the Philippines (March - September 2020)



Exercice 3.5.1

Untitled Graph

Save



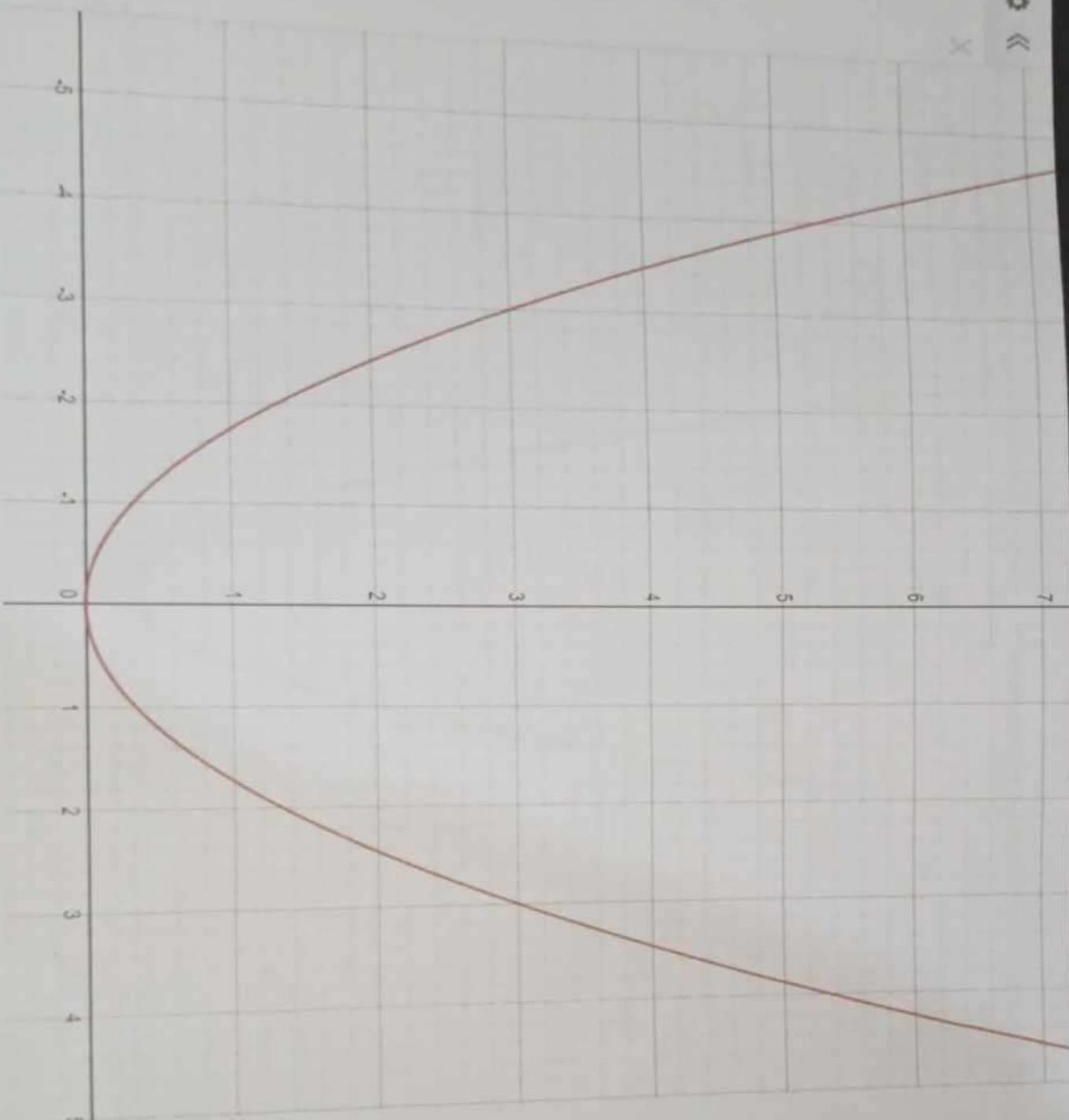
$$y = \frac{1}{3}x^2$$

desmos

Log In

or

Sign Up

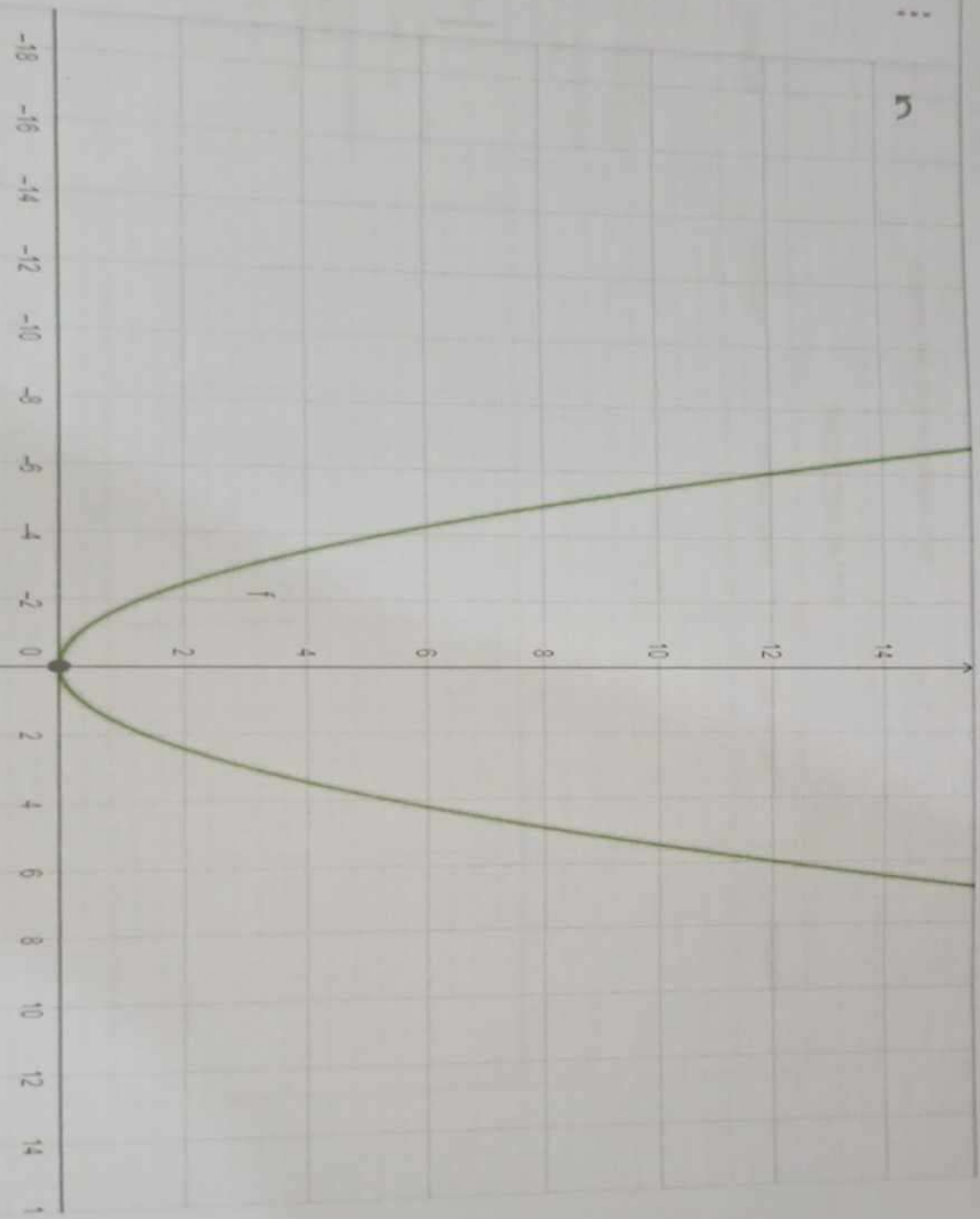


Exercice 3.6 :

GeoGebra Calculator Suite

Graphing

$f: y = \frac{1}{3}x^2$



Exercise 9.7:

T-TEST PAIRS=X WITH Y (PAIRED)
/CRITERIA=CI(.9500)
/MISSING=ANALYSIS.

T-Test

[DataSet0]

Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
Pair 1 Pre-Test	17.00	20	3.798	.849
Posttest	19.00	20	4.823	1.078

Paired Samples Correlations

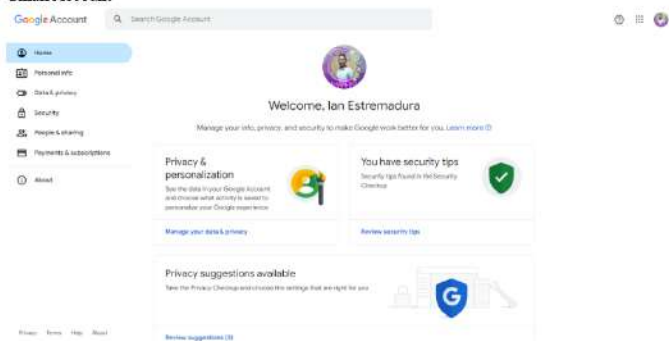
	N	Correlation	Sig.
Pair 1 Pre-Test & Posttest	20	.793	.000

Paired Samples Test

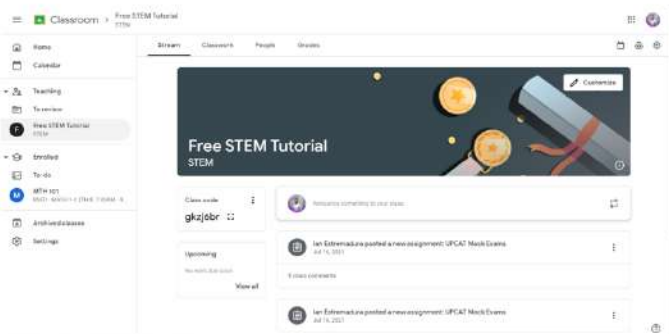
Paired Samples Test										
Pair 1	Pre-Test - Posttest	Paired Differences						t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference					
					Lower	Upper				
		-2.000	2.938	.657	-3.375	-.625	-3.044	19	.007	

Exercise 4.1.:

1. Gmail Account



2. Google Classroom



Search



9:30 AM
12/17/2023



MTHT 202: Technology for Teaching and Learning 2

Unit 5: Characteristics of Good/Appropriate Instructional Materials (IMs) and Technology Tools

Exercise 5.1.: Criteria Checklist

Criteria	Textbooks	Worksheets	Visual Aids	Multimedia Resources	Manipulatives	Online Resources	Laboratory Equipment	Art Supplies	Reference Materials
Alignment with Learning Objectives (Do the materials/tools align with the learning objectives and goals of the curriculum?)									
Engagement and Interactivity (Are the materials/tools engaging and interactive, promoting active participation and maintaining student interest?)									
Accessibility and Inclusivity (Do the materials/tools accommodate diverse learning needs and provide accessibility features for all students?)									
Relevance and Authenticity (Are the materials/tools relevant and authentic, connecting to real-world experiences and applications?)									
Differentiation and Personalization (Do the materials/tools allow for differentiation and personalization, catering to individual student needs and interests?)									



Search



9:30 AM
12/17/2023



Unit 6: Learning Resources (Digital and Non-Digital Resources)

Exercise 6.1.:

1. How will an educator use social media for teaching-learning?

Educators can use social media in various ways to enhance teaching and learning. Here are some ways educators can utilize social media for teaching-learning:

a.) Broadcasting updates and alerts:

Educators can use social media platforms to post updates and alerts regarding class schedules, assignments, and important announcements, ensuring that students are informed and engaged.

b.) Sharing resources and materials:

Social media provides a convenient platform for educators to share relevant resources, such as articles, videos, and websites, that supplement the curriculum and enhance students' understanding of the subject matter.

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Unit 7: Assessment of ICT Resources in Mathematics Teaching and Learning

Exercise 7.1.:

1. Reflection about the current trends in assessment.

Current trends in assessment reflect a shift towards more holistic, student-centered, and technology-driven approaches to evaluating learning outcomes. Several notable trends are shaping the landscape of assessment in education today:

Competency-based assessment: There is a growing emphasis on assessing students' mastery of specific competencies and skills rather than relying solely on traditional standardized tests. Competency-based assessment focuses on evaluating students' ability to apply knowledge in practical scenarios, fostering a deeper understanding of the subject matter.

Formative assessment: Educators are increasingly incorporating formative assessment practices into their teaching, using ongoing feedback and assessment to monitor student progress and adjust instructional strategies in real time. This trend promotes a more proactive and responsive approach to supporting student learning.

Personalized assessment: With the recognition of the diverse needs and learning styles of students, there is a trend towards personalized assessment approaches that take into account individual strengths, interests, and challenges. Personalized assessment methods aim to provide tailored feedback and evaluation that resonates with each student's unique learning journey.

Digital and online assessment tools: The integration of technology in assessment has led to the development of digital platforms, online quizzes, and computer-based testing systems. These tools offer greater flexibility, accessibility, and efficiency in administering assessments, as well as providing immediate feedback to both students and educators.

Social and emotional learning assessment: Beyond academic achievements, there is a growing focus on assessing students' social and emotional competencies, such as resilience, empathy, and collaboration. This trend reflects a broader recognition of the importance of holistic development and well-being in education.

Authentic and performance-based assessment: Authentic assessment methods, including project-based assessments, portfolios, and real-world simulations, are gaining prominence as they offer a more realistic and comprehensive evaluation of student capabilities.



Search



9:31 AM
12/17/2023

Jan J. Extremadura BSED Math 3-C

MTHT202: Technology for Teaching and Learning 2 (Mathematics)

Unit 1: Using ICT in developing 21st Century Skills/ICT in the 21st Century

Activity:

1) What are the 21st century skills that students need to develop in this information age? Discuss the importance of 21st century skills in the 21st century learners.

→ Students today must acquire a broad range of abilities to succeed in the information era. These abilities go beyond the knowledge found in the classroom and are crucial for success in a world that is undergoing fast change. The following are some essential 21st-century talents that students need to master:

- 1) Digital Literacy - Being adept in using digital tools and technology for communication, research, and problem solving is essential.
- 2) Critical Thinking - The ability to critically assess information, think for themselves, and make decisions.
- 3) Communication Skills - Clarity in thought, expression and teamwork depend on effective verbal and written communication.

2) List down ICT tools for teaching and learning mathematics.

→ There are numerous ICT resources that help improve math instruction & comprehension. These resources can help students better understand and apply arithmetic ideas. The following is a list of ICT resources for math education and learning:

- | | |
|--------------------------|------------------------------------|
| 1) Graphing Calculators; | 4) Google Workspace; |
| 2) Math Software; | 5) Math Games and Apps; |
| 3) Digital Whiteboards; | 6) Virtual Manipulatives; and etc. |



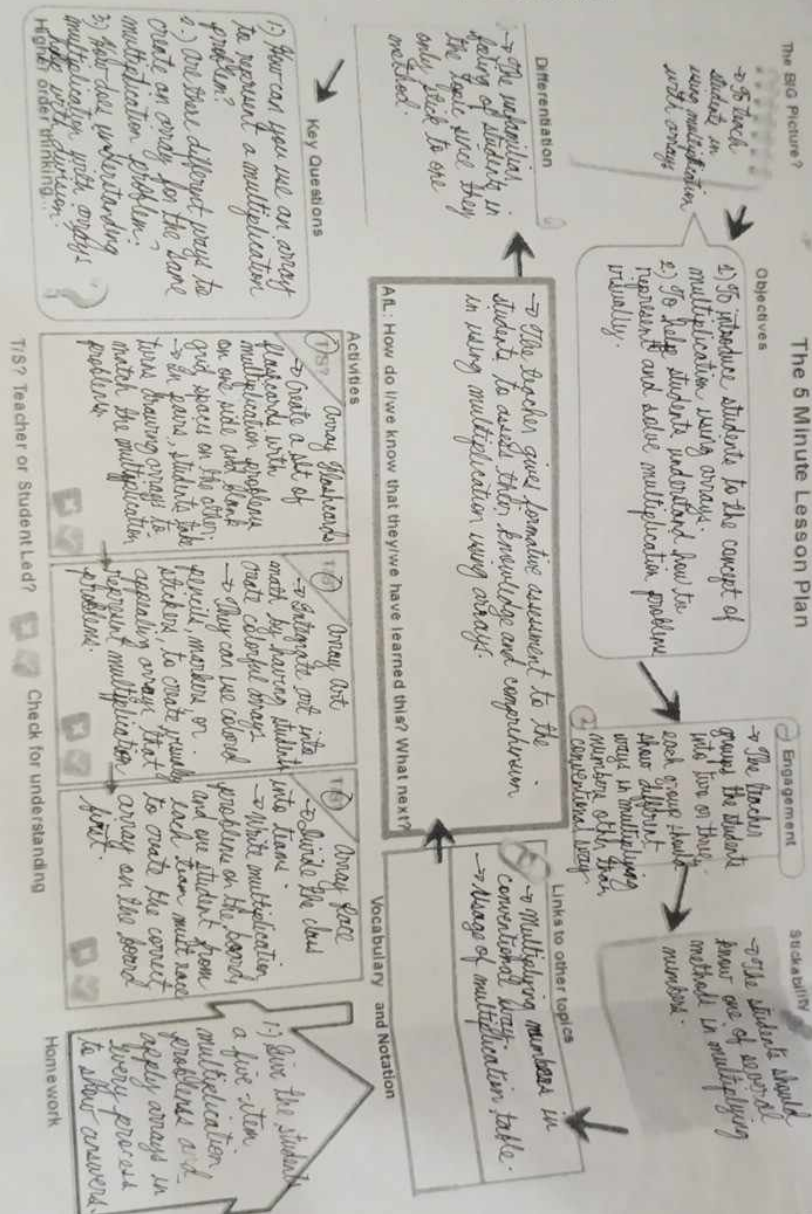
MTHT202: Technology for Teaching and Learning 2 (Mathematics) Unit 2: Developing Problem-based and Project-based Plans

Activity:

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Activity

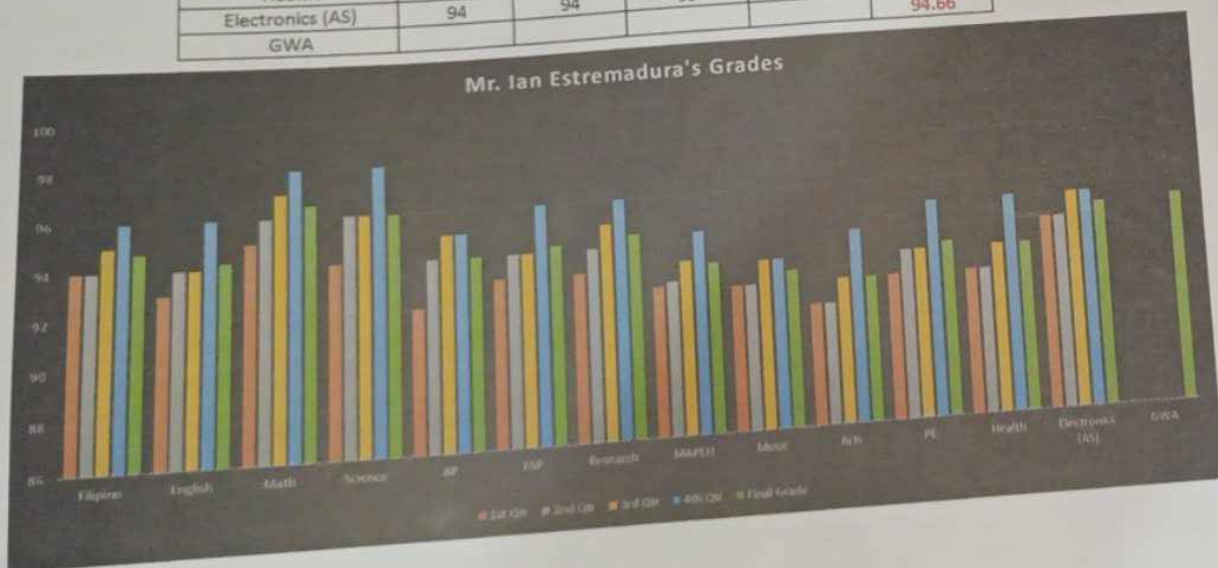
Complete the 5-minute Lesson Plan on any Math topic of your choice.



Activity in MTH202:

Unit 3: Productivity Software Applications/Tools for Teaching and Learning

Estremadura, Ian Tanjusay Grade 10-SPSTE (SY 2017-2018)					
	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Final Grade
Grade 10					94.75
Filipino	94	94	95	96	94.25
English	93	94	94	96	96.50
Math	95	96	97	98	96.00
Science	94	96	96	95	94.00
AP	92	94	95	96	94.25
ESP	93	94	94	96	94.50
Research	93	94	95	94	93.05
MAPEH	92	92	93	93	92.50
Music	92	92	92	94	92.00
Arts	91	91	92	95	93.25
PE	92	93	93	95	93.00
Health	92	92	93	95	94.50
Electronics (AS)	94	94	95		94.66
GWA					





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MTHT 202: Technology for Teaching and Learning 2

Unit 4: Open-ended tools in Mathematics Teaching and Learning

Exercise 4.1.:

1. Gmail Account

The screenshot shows the Google Account dashboard for Ian Estremadura. The left sidebar contains links to Home, Personal info, Data & privacy, Security, People & sharing, Payments & subscriptions, and About. The main content area includes a welcome message, a search bar, and several management cards: Privacy & personalization, You have security tips, and Privacy suggestions available. The bottom of the page has links for Privacy, Terms, Help, and About.

2. Google Classroom

The screenshot shows the Google Classroom interface for the 'Free STEM Tutorial' class. The left sidebar contains links to Home, Calendar, Teaching, To review, Free STEM Tutorial, Enrolled, To-do, MTH 101, Archived classes, and Settings. The main content area includes a class banner, a class code (gkzj6br), and a list of assignments. The assignments list shows two assignments titled 'UPCAT Mock Exams' posted by Ian Estremadura on July 16, 2021.



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3. Google Meet



11:04 PM • Fri, Dec 15

Premium video meetings.
Now free for everyone.

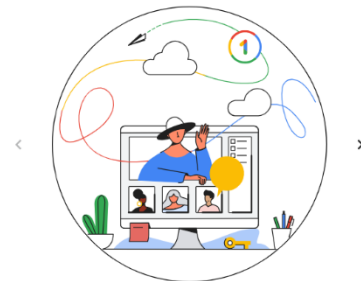
We re-engineered the service we built for secure business meetings, Google Meet, to make it free and available for all.

New meeting

Enter a code or link

Join

[Learn more](#) about Google Meet



Unlock premium Meet features

Enjoy longer group video calls, noise cancellation, and more with a Google One Premium plan. [Explore plan](#)

4. YouTube

The screenshot shows the YouTube channel page for Ian Estremadura (@ianestremadura8392). The channel has 1 video. The video is titled "MEMORIES AT 7-maSTErS E.P.P Role Play" and has 20 views, posted 8 years ago. The channel also features a "Created playlists" section with two playlists: "League of Legends BNCHS" (110 videos) and "Modern talking" (4 videos). The left sidebar shows the channel's navigation menu, including Home, Shorts, Subscriptions, and a list of subscriptions like ABS-CBN News, ABS-CBN Enterta..., News5Everywhere, SBS Running Man, Whose Line Is It ..., and tvN drama.



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5. Socrative

LaunchLibraryRoomsReportsLive Results

0ESTREMADURAGet PDFIE

Algebra 1

Save and Exit

Align Quiz to Standard

Share

A.2The student will perform operations on polynomials, including

1. What is the standard form of a quadratic equation?

1point

A

☒

$ax^2 + bx + c = 0$

+⊞×

B

☐

$y = mx + b$

+⊞×

C

☐

$y = \frac{\text{rise}}{\text{run}}$

+⊞×

D

☐

$ax + by + c = 0$

+⊞×

+ Add Answer

+⊞×

+

⊞×

✓

⊞×

i An explanation, if you like.

+⊞×

Add a Question

Multiple ChoiceTrue / FalseShort Answer



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Unit 6: Learning Resources (Digital and Non-Digital Resources)

Exercise 6.1.:

1. How will an educator use social media for teaching-learning?

Educators can use social media in various ways to enhance teaching and learning. Here are some ways educators can utilize social media for teaching-learning:

a.) Broadcasting updates and alerts:

Educators can use social media platforms to post updates and alerts regarding class schedules, assignments, and important announcements, ensuring that students are informed and engaged.

b.) Sharing resources and materials:

Social media provides a convenient platform for educators to share relevant resources, such as articles, videos, and websites, that supplement the curriculum and enhance students' understanding of the subject matter.

c.) Facilitating discussions and collaboration:

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g.) Extending learning beyond the classroom:

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e.) Interactivity:

Many e-books offer interactive features such as hyperlinks, bookmarks, and search functions. These features enhance the reading experience by allowing readers to quickly navigate through the content, look up definitions, or access additional resources.

f.) Environmentally friendly:

E-books are a more sustainable option compared to printed books. They eliminate the need for paper production, reducing deforestation and carbon emissions associated with the printing industry.

These advantages make e-books a popular choice for readers who value convenience, affordability, and accessibility.

3. Explain the purpose of using teaching learning resources in teaching learning process.

The purpose of using teaching-learning resources in the teaching-learning process is to enhance the effectiveness of education by providing varied and engaging materials that support diverse learning styles and facilitate a deeper understanding of the subject matter. Here are some specific purposes of using teaching-learning resources:

Enhancing comprehension: Resources such as visual aids, multimedia materials, and hands-on manipulatives can help students grasp complex concepts more easily by providing concrete examples and illustrations.

Catering to diverse learning styles: Different students have different learning preferences, such as visual, auditory, or kinesthetic learning. By utilizing a variety of resources, educators can accommodate these diverse learning styles and ensure that every student has the opportunity to learn in a way that resonates with them.

Fostering engagement: Interactive and stimulating resources can capture students' attention and maintain their interest in the learning process. This can lead to increased motivation and active participation in the classroom.

Providing real-world context: Resources such as case studies, simulations, and field trips can bring real-world relevance to the topics being taught, helping students understand how the concepts apply in practical situations.

By leveraging a wide range of teaching-learning resources, educators can create an enriching and inclusive learning environment that supports the academic, social, and emotional development of all students.



MTHT 202: Technology for Teaching and Learning 2

Unit 7: Assessment of ICT Resources in Mathematics Teaching and Learning

Exercise 7.1.:

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Authentic and performance-based assessment: Authentic assessment methods, including project-based assessments, portfolios, and real-world simulations, are gaining prominence as they offer a more realistic and comprehensive evaluation of students' capabilities and readiness for the challenges they will face beyond the classroom.

Data-informed decision-making: Assessment trends are increasingly aligned with the use of data to inform instructional practices, curriculum design, and policy decisions. Educators and institutions are leveraging assessment data to identify trends, measure effectiveness, and drive continuous improvement in teaching and learning.

In reflecting on these trends, it is evident that assessment in education is evolving to better align with the diverse needs of students, the demands of the modern workforce, and the opportunities presented by advancements in technology. Embracing these trends can lead to more meaningful and equitable assessment practices that support the holistic development of learners and the continuous improvement of educational systems.



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2. Pictures





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3. Sample Alternative Assessment

Project Title: Trigonometry in the Real World

Objective: To apply trigonometric concepts to solve real-world problems and demonstrate understanding of trigonometric functions and their applications.

Instructions:

1. Select a real-world scenario that involves trigonometric principles, such as calculating distances, heights, angles, or periodic phenomena.
2. Develop a project that applies trigonometric concepts to analyze and solve the chosen scenario. This could involve creating diagrams, using trigonometric formulas, and explaining the relevance of trigonometry in the context of the scenario.
3. Present your findings and solutions in a comprehensive report, presentation, or multimedia format.

Components of the Project:

1. **Real-world scenario description:** Provide a detailed explanation of the chosen real-world scenario and its relevance to trigonometry.
2. **Application of trigonometric concepts:** Demonstrate how trigonometric functions (sine, cosine, tangent) and trigonometric identities are used to analyze and solve the problem.
3. **Mathematical calculations:** Show step-by-step calculations and formulas used to derive solutions, including diagrams or visual aids where applicable.
4. **Reflection and analysis:** Reflect on the process of applying trigonometry to the real-world scenario, discussing challenges, insights, and the significance of the results.
5. **Presentation:** Present your project in a format that effectively communicates the scenario, the application of trigonometry, and the solutions obtained. This could be in the form of a written report, a slideshow, a video presentation, or any other suitable medium.

Assessment Criteria:

1. Application of trigonometric principles to the real-world scenario.
2. Accuracy and thoroughness of mathematical calculations and problem-solving.
3. Clarity and coherence of the project presentation.
4. Reflection on the significance of trigonometry in the context of the scenario.
5. Overall creativity, effort, and engagement in the project.



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4. Sample Rubric in rating alternative assessment

Criteria	Excellent (100)	Good (75)	Fair (50)	Needs Improvement (25)
Application of Trigonometry	Demonstrates exceptional application of trigonometric principles to the real-world.	Shows proficient application of trigonometry concepts to the real-world scenario.	Displays basic application of trigonometry principles to the real-world scenario.	Shows little to no application of trigonometry concepts in the real-world scenario.
Accuracy and Thoroughness of Mathematical Calculations	Accurate, thorough, and precise mathematical calculations with clear and logical steps.	Mostly accurate and thorough mathematical calculations with some minor errors or omissions in the steps.	Contains some errors or lacks thoroughness in mathematical calculations, with unclear or incomplete steps or explanations.	Contains numerous errors and lacks thoroughness in mathematical calculations.
Clarity and Coherence of the Project Presentation	The presentation is highly organized, effectively communicates the scenario, the application of trigonometry, and the solutions.	The project is well-structured and coherent, effectively conveying the scenario, the application of trigonometry, and the solutions.	The project is somewhat organized and coherent but may lack clarity in parts or coherence.	The presentation lacks organization and coherence, making it difficult to follow.
Reflection and Analysis	Provides a thoughtful and insightful reflection on the significance of trigonometry.	Offers a reflective analysis, discussing the challenges and insights of the project.	Contains some reflection, but lacks in-depth analysis of the significance of trigonometry.	Lacks reflection and analysis of the significance of trigonometry in the project.
Creativity, Effort, and Engagement in the Project	Demonstrates exceptional creativity, effort, and engagement in the project, going above and beyond in the presentation and analysis.	Shows creativity, effort, and engagement in the project, demonstrating a good level of involvement and creativity.	Displays some creativity and effort in the project, but lacks consistent engagement.	Shows limited creativity, effort, and engagement in the project and beyond in the presentation and analysis involvement and creativity.



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Exercise 7.2.:

1. Three methods of assessment:
<https://www.niu.edu/citl/resources/guides/instructional-guide/formative-and-summative-assessment.shtml#:~:text=There%20are%20three%20types%20of,diagnostic%2C%20formative%2C%20and%20summative.>

Diagnostic Assessment: Diagnostic assessment plays a crucial role in education, as it provides valuable insights into students' prior knowledge, skills, and understanding before instruction begins. This type of assessment serves as a diagnostic tool for educators to identify students' strengths, weaknesses, and learning needs, allowing for personalized and targeted instruction.

Formative Assessment: Formative assessment serves as a cornerstone of effective teaching and learning, offering continuous feedback and opportunities for improvement throughout the educational process.

Summative Assessment: Summative assessment serves as a culmination of students' learning experiences, providing a comprehensive evaluation of their knowledge, skills, and understanding at a particular point in time.

2. Make a rubric in selecting appropriate assessment tool.

Criteria	4	3	2	1
Alignment with Learning Objectives	The assessment tool directly aligns with the specific learning objectives and desired outcomes, providing a clear measure of student mastery.	The assessment tool is mostly aligned with the learning objectives but may not fully capture all aspects of the intended outcomes.	The alignment between the assessment tool and learning objectives is unclear or limited, making it challenging to assess targeted skills and knowledge.	The assessment tool does not align with the stated learning objectives, rendering it unsuitable for measuring the intended outcomes.
Validity and Reliability	The assessment tool has been validated and demonstrates reliability in measuring the intended constructs, ensuring consistency and accuracy of results.	The assessment tool shows evidence of validity and reliability, although there may be some limitations or uncertainties in its application.	There are concerns about the validity or reliability of the assessment tool, raising questions about its effectiveness in providing accurate and meaningful data.	The assessment tool lacks validity and reliability, making it unreliable for making sound judgments about student performance.
Accessibility and Inclusivity	The assessment tool is accessible to all students and	The assessment tool is mostly inclusive, with some	There are significant barriers to accessibility and	The assessment tool is not accessible or inclusive,



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	accommodates diverse learning needs, ensuring equitable participation and fair assessment opportunities.	accommodations available, but there may be limitations in reaching all students effectively.	inclusivity, potentially disadvantaging certain students or failing to account for diverse learning styles and needs.	leading to unfair advantages or disadvantages for specific student populations.
Practicality and Efficiency	The assessment tool is practical to administer, efficient in terms of time and resources, and integrates seamlessly into the instructional process.	The assessment tool is generally practical and efficient, but there may be some logistical challenges or resource implications associated with its implementation.	Practicality and efficiency issues are evident, making it burdensome or impractical to use the assessment tool effectively.	The assessment tool is impractical, inefficient, or resource-intensive, posing significant barriers to its successful implementation.
Engagement and Authenticity	The assessment tool promotes student engagement and authenticity, reflecting real-world application and meaningful tasks that resonate with students' experiences.	The assessment tool encourages moderate levels of student engagement and authenticity, but there may be opportunities to enhance its relevance and real-world connections.	The assessment tool lacks meaningful engagement or authenticity, presenting disconnected or artificial tasks that do not resonate with students' experiences.	The assessment tool is highly disengaging and lacks authenticity, failing to motivate or connect with students effectively.