NOTE:  
THIS IS ONLY A REPOST

ANSWER KEY FOR THE THIRD (3RD) 50-ITEM QUIZ WITH EXPLANATIONS AND SOLUTIONS◆

PART 1: ENGLISH  
1. The guest speaker, together with the visitors, \_\_\_\_ arrived.  
A. has√ B. have  
●(Intervening prepositional phrases like 'along with', 'together with', 'as well as', do not affect the subject)●  
●(The guest speaker has arrived)●

2. The trousers \_\_\_ on sale until the end of the year.  
A. is B. are√  
●(Plural forms of nouns take on plural verbs, unless they are introduced by the expression 'a pair of'.)●

3. Neither of the five shirts \_\_\_ black.  
A. is√ B. are  
●(The pronouns 'neither' and 'either' are singular and require singular verbs even though they seem to be referring, in a sense, to two things.)●

4. It was not the agents, but the supervisor that \_\_\_ provoked the customer to complain.  
A. has√ B. have  
●(If the sentence consists of both positive and negative subjects, the verb should agree with the positive subject.)●

5. My friend and teacher \_\_\_ to read.  
A. like B. likes√  
●("And" requires a singular verb if it refers to the same subject; plural when it refers to different subjects.)●

6. I \_\_\_\_\_\_ him a glass of water.  
A. bought B. brought√  
●('Brought' is the past tense of 'bring'.)●  
●('Bought' is the past tense of 'buy'.)●

7. Some of the mail \_\_\_ open.  
A. is√ B. are  
●(Some indefinite pronouns such as 'all', 'none', 'some', are singular or plural depending on what they're referring to.)●

8. Each of these children \_\_\_\_ the answer by-heart.  
A. know B. knows√  
●('Each', 'every', 'either', 'neither' take a singular verb.)●

9.Neither the visitors nor his nephew \_\_\_ responsible for the inconveniences at the party.  
A. is√ B. are  
●(The expressions 'either..or', 'neither..nor' take the clue from the nearest subject)●

10. He is going to \_\_\_\_\_ some cake to Joe's house for his birthday party.  
A. bring B. take√  
●(We 'take' things to the place we are going to. We 'take' them from the place where we are to another place. 'Take' is used in relation to a starting point.  
OR  
Use 'take' to talk about movements to all other places.)●

11. One of my friends \_\_\_ to go to London.  
A. want B. wants√  
●(The phrase 'one of' requires a singular verb.)●

12. A pair of scissors \_\_\_ what he needs.  
A. is√ B. are  
●(Plural forms of nouns take on plural verbs, unless they are introduced by the expression 'a pair of' -- which requires a singular verb.)●

13. My friend and my teacher both \_\_\_ to read.  
A. like√ B. likes  
●("And" requires a singular verb if it refers to the same subject; plural when it refers to different subjects.)●

14. Either Jimmy or we \_\_\_\_ taking the examination.  
A. is B. are√  
●(The expression 'either..or', 'neither..nor' take the clue to the nearest subject)●

15. Apple records \_\_\_ in New York.  
A. is√ B. are  
●('Titles of books, movies or companies' require a singular verb.)●

16. The crowd \_\_\_\_\_ the show.  
A. appreciate B. appreciates√  
●(Collective nouns like 'team', 'staff', 'group', 'family', 'crowd', 'audience', 'army', etc. require a singular verb if they mean collectively, and plural, the members of the group are thought of as acting separately.)●

17. Either plan \_\_\_\_ fine with me.  
A. is√ B. are  
●(The pronouns 'neither' and 'either' are singular and require singular verbs eventhough they seem to be referring, in a sense, to two things.)●

18. Go and \_\_\_\_ that ball.  
A. bring B. fetch√  
●(To 'fetch' something is to go to the place where it is and then bring it back to the current location.)●

19. Can you \_\_\_\_\_ me that ball?  
A. bring√ B. fetch  
●('Bring' is used to talk about movement to the place where the speaker is at the moment of speaking.  
OR  
We ask people to bring things to the place where we are. 'Bring' is used in relation to a destination.)●

20. She \_\_\_\_ a new car last month.  
A. bought√ B. brought  
●('Bought' is the past tense of 'buy'.)●  
●('Brought' is the past tense of 'bring'.)●

21. Statistics \_\_\_\_ that the call center industry is the top choice of graduates in the last three years.  
A. reveal√ B. reveals  
●(Some words ending in -s refer to a single thing but are nonetheless plural and require a plural verb.)●

22. The team \_\_\_ taking their launches at the moment.  
A. is B. are√  
●(Collective nouns like 'team', 'staff', 'group', 'family', 'audience', 'army', etc. require a singular verb if they mean collectively, and plural, the members of the group are thought of as acting separately.)●

23. A large percentage of the older population \_\_\_ voting against him.  
A. is√ B. are  
●(The fractional expressions such as 'half of', 'a part of', 'percentage of', 'a majority of' are some singular and sometimes plural, depending on the meaning.)●

24. Three hundred pesos \_\_\_ all he need to buy that t-shirt.  
A. is√ B. are  
●('Money', 'distance', 'measurement', 'time' always require a singular verb.)●

25. The news about her wedding \_\_\_ all over the place.  
A. is√ B. are  
●(Some words end in -s and appear to be plural but are really singular and require singular verbs.)●

PART 2: MATHEMATICS  
26. King is 8 years older than Queen. The sum of their ages is 62. What are their ages?  
A. 27 y/o and 35 y/o√ B. 29 y/o and 37 y/o  
●SOLUTION(s)●  
●Let●  
●x : Queen's age●  
●x+8 : King's age (We used "x+8" because of the word "older")●  
●Total/sum : 62  
●x+x+8=62●  
●2x=62-8●  
●2x=54●  
●(2 and 54 are both divisible by 2)●  
●2x/2 = 54/2●  
●x=27 y/o● (Queen's age)  
●x+8 = 27+8 = 35●  
●35 y/o● (King's age)  
●27 y/o and 35 y/o●

27. In a box of colored balls, there 7 yellow balls and 8 black balls. What is the ratio of the number of black balls to the total number of balls?  
A. 7:15 B. 8:15√  
●SOLUTION(s)●  
●Number of yellow balls: 7●  
●Number of black balls: 8●  
●Total number of balls: (7+8) = 15●  
●Therefore, the ratio of the number of black balls (8) to the total number of balls (15)  
●8:15●

28. A car is traveling at an average speed of 80 kph. What is the total distance it traveled after 10 hours  
A. 810 km B. 800 km√  
●SOLUTION(s)●  
●1 hr:80 km and 100 hrs: ?●  
●1:80 = 100:n●  
●1 X n = 80 X 100. So, n = 800●  
●800 km●  
●(a:b and c:d) (a:b = c:d) (a X d = b X c)●

29. John has 30 coins in his pocket. Five of them are 10 cents and 15 of them are 5 cents. If the remaining coins are 25 cents, how much money does John in his pocket?  
A. P3.25 B. P3.75√  
●SOLUTION(s)●  
Given:  
●(5) X 10 cents (0.10) = 50 ¢ (0.50)●  
●(15) X 5 cents (0.05) = 75 ¢ (0.75)●  
●Total of 30 coins:(5+15=20 subtracted from 30)= 10 coins left, each of which is a 25 cents = (10) X 25 cents= (10 X 0.25) = two pesos and 50 centavos (2.50)●  
●Add them all●  
●0.50 + 0.75 + 2.50 = P3.75●  
●P3.75●

30. Joe is 6 years older than John. In 5 years, the sum of their ages is 64. How old are both of them?  
A. 29 y/o and 35 y/o√ B. 27 y/o and 33 y/o  
●Let●  
●x : John's age (now)●  
●x+6 : Joe's age (now) (We used "x+6" because of the word "older")●  
●Total/sum - 64●  
(Because of the phrase "in 5 years", we must add "+5" in "x" (John's age) and also "+5" in "x+6" (Joe's age)●  
●x+5 : John's age (in 5 years)●  
●x+6+5 : Joe's age (in 5 years)●  
●(x+5)+(x+6+5) = 64  
●2x+16=64●  
●2x=64-16●  
●2x=48●  
●(2 and 48 are both divisible by 2)●  
●2x/2 = 48/2●  
●x=24●  
●x+5 = 24+5 = 29●   
●29 y/o● (John's age)  
●x+6+5 = 24+6+5 = 35●  
●35 y/o● (Joe's age)

31. Anna put three teaspoons of sugar for every cup of coffee. Represent the ratio of the number of teaspoons of sugar if there are eight cups of coffee.  
A. 24:8 or 3:1√ B. 3:8  
●SOLUTION(s)●  
Given:  
●Number of teaspoons of sugar: 3●  
●Number of cups of coffee: 8●  
●(3 teaspoons of sugar) X (8 cups of coffee) = 24●  
●24:8 or 3:1●

32. 6 cubes of sugar is needed to make 2 cups of coffee. How many cubes of sugar is needed to make 40 cups of coffee?  
A. 210 B. 120√  
●SOLUTION(s)●  
6:2 (6 cubes of sugar is needed to make 2 cups of coffee)  
x:40 (how many cubes of sugar is needed to make 40 cups of coffee?)  
●6:2 = x:40●  
●2(x) = 6(40)●  
●2x = 240●  
●(2 and 240 is divisible by 2)●  
●2x/2 = 240/2●  
●x = 120●

33. Sam is twice as old as Angel. 3 years ago, the sum of their ages is 45. How old are both of them now?  
A. 17 y/o and 34 y/o√ B. 18 y/o and 36 y/o  
●SOLUTION(s)●  
●Let●  
●x : Angel's age (now)●  
●2x : Sam's age (now) (We used "2x" because of the phrase "twice as old")  
●Total/sum - 45●  
●(Because of the phrase "3 years ago",we must add "-3" in "x" (Angel's age) and also "-3" in "2x" (Sam's age)●  
●x-3 : Angel's age (3 years ago)●  
●2x-3 : Sam's age (3 years ago)●  
●(x-3)+(2x-3)=45●  
●3x-6=45●  
●3x=45+6●  
●3x=51●  
●(3 and 51 are both divisible by 3)●  
●3x/3 = 51/3●  
●x=17 y/o (Angel's age)●  
●2x = 2(17) = 34●  
●34 y/o (Sam's age)●  
●17 y/o and 34 y/o●

34. The ratio of boys and girls in a dance club is 4:5. The total number of students is 63. How many boys and girls are there in the club?  
A. 35 boys and 28 girls B. 28 boys and 35 girls√  
●SOLUTION(s)●  
Given:  
●Ratio of boys and girls: 4:5●  
●Ratio of boys = 4x●  
●Ratio of girls = 5x●  
●Total number: 63●  
●4x + 5x = 63●  
●9x = 63●  
●(9 and 63 are divisible by 9)●  
●9x/9 = 63/9●  
●x= 7●  
●4x = 4 (7) = 28 boys●  
●5x = 5 (7) = 35 girls●  
●28 boys and 35 girls●

35. The ratio of two numbers is 7:9. If their difference is 24, what is their sum?  
A. 182 B. 192√  
●SOLUTION(s)●  
●(difference) ÷ (how many numbers) = (answer) X (ratio of 1st number) = (sum of 1st number)●  
●24÷2=12X7=84●  
●(difference) ÷ (how many numbers) = (answer) X (ratio of 2nd number) = (sum of 2nd number)●  
●24÷2=12X9=108●  
●(sum of 1st number) + (sum of 2nd number) = sum of them●  
●84+108●  
●192●

36. Ben is thrice as old as his son June. The sum of their ages is 76. How old are both of them?  
A. 17 y/o and 51 y/o B. 19 y/o and 57 y/o√  
●SOLUTION(s)●  
●x : June's age●  
●3x : Ben's age (We used "3x" because of the phrase "thrice as old")●  
●Total/sum - 76●  
●x+3x=76●  
●4x=76●  
●(4 and 76 are both divisible by 4)●  
●4x/4 = 76/4●  
●x=19 y/o● (June's age)  
●3x = 3(19) = 57●  
●57 y/o (Ben's age)  
●19 y/o and 57 y/o●

37. The ratio of the white, black, violet balls in a box is 2:3:5. If there are 100 balls in the box, how many violet balls are there?  
A. 30 B. 50√  
●SOLUTION(s)●  
●Ratio of white balls: 2x●  
●Ratio of black balls: 3x●  
●Ratio of violet balls: 5x●  
●Total number: 100●  
●2x + 3x + 5x = 100●  
●10x = 100●  
●(10 and 100 are both divisible by 10)●  
●10x/10 = 100/10●  
●x = 10●  
●2x = 2(10) = (20 white balls)●  
●3x = 3(10) = (30 black balls)●  
●5x = 5(10) = (50 violet balls)●  
●50 violet balls●

38. How many men can do a work for 8 days, if one man can do a work for 4 days?  
A. 2√ B. 4  
●SOLUTION(s)●  
●N/8 = 1/4●  
●N = 8(1)/4●  
●N= 8/4●  
●N = 2●  
●2●

39. In a charity musical show, there are the same number of tickets sold worth $20, $50, and $100. The total cost of the tickets is $8,500.  
A. 50√ B. 60  
●SOLUTION(s)●  
Given:  
●$20 = 20x●  
●$50 = 50x●  
●$100 = 100x●  
●Sum/Total: $8,500●  
●20x + 50x + 100x = 8,500●  
●170x = 8,500●  
●(170 & 8,500 are divisible by 170)●  
●170x/170 = 8,500/170●  
●x = 50●

40. Josh is twice as old as Jake. If 6 is subtracted from Josh's age and 12 is added to Jake's age, then their ages will be equal. How old are both of them?  
A. 17 y/o and 34 y/o B. 18 y/o and 36 y/o√  
●SOLUTION(s)●  
●Let●  
●x : Jake's age●  
●2x : Josh's age (We used "2x" because of the phrase "twice as old")●  
●Total/sum : equal●  
●(Because of the phrase "6 is subtracted from Josh's age (-6) and "12 is added (+12) to Jake's age, we must add it in "2x" (Josh's age) and in "x" (Jake's age), respectively.)●  
●2x-6 =x+12●  
●2x-x = 12+6●  
●x=18 y/o● (Jake's age)  
●2x = 2(18) = 36●  
●36 y/o● (Josh's age)●  
●18 y/o and 36 y/o●  
\*\*So, Josh is twice as old as Jake.  
\*\*Subtracting 12 from Josh's age results to 24 (36-12=24)  
\*\*Adding 6 to Jake's age is also 24 (18+6=24)  
\*\*Therefore, their ages will be equal. (24 = 24)

41. The ratio of male employees to the female employees of the manufacturing company is 16:25. The total number of employees is 246. If the company hired 4 male workers, then what would be the new ratio of male to female employees of the company?  
A. 2:3√ B. 3:4  
●SOLUTION(s)●  
●Ratio of male: 16x●  
●Ratio of female: 25x●  
●Total number: 246●  
●16x + 25x = 246●  
●41x = 246●  
●(41 and 246 are divisible by 41)●  
●41x/41 = 246/41●  
●x = 6●  
●16x = 16(6)= 96●  
●25x = 25(6) = 150●  
●The company hired 4 male workers●  
●Male: 96 + 4= 100●  
●Female: 150●  
●(100 and 150 is divisible by 50)●  
●100÷50 over 150÷50●  
●2/3●  
●2:3●

42. If a father gave P200.00 to his 3 children in the ratio of 5:2:3. How much will the first child get?  
A. P100√ B. P40  
●SOLUTION(s)●  
●Ratio of the 1st child: 5x●  
●Ratio of the 2nd child: 2x●  
●Ratio of the 3rd child: 3x●  
●Total/Sum: 200●  
●5x + 2x + 3x = 200●  
●10x = 200●  
●(10 and 200 are both divisible by 10)●  
●10x/10 = 200/10●  
●x = 20●  
●5x = 5(20) = P100 (1st child●  
●2x = 2(20) = P40 (2nd child)●  
●3x = 3(20) = P60 (3rd child)●  
●P100 (1st child)●

43. Kate is 5 times as old as Katrina. 5 years from now, she will be 3 times as old as Katrina. How old is Kate?  
A. 30 y/o B. 25 y/o√  
●SOLUTION(s)●  
●Let●  
●x : Katrina's age●  
●5x : Kate's age (We used "5x" because of the phrase "5 times as old")●  
●Total/sum : equal●  
●(Because of the phrase "5 years from now", we must add "+5" to "x" (Katrina's age) and also "+5" to "5x" (Kate's age)●  
●(x+5) = 5x+5●  
●{Another phrase "3 times as old" which means 3 is to be multiplied to Katrina's age (x+5), that is, 3(x+5) }●  
●3(x+5) = 5x+5●  
●(By Distribution Property, we have)●  
●3x+15 = 5x+5●  
●(Putting all "x" to the left and all numbers to the right, we have)●  
●3x-5x = 5-15●  
●-2x = -10●  
●{Multiplying both sides by a negative sign (-) }  
● -(-2x=-10) - ●  
●2x=10●  
●(2 and 10 are both divisible by 2)●  
●2x/2 = 10/2●  
●x=5 y/o● (Katrina's age)  
●5x = 5(5) = 25●  
●25 y/o● (Kate's age)  
●25 y/o●

44. The ratio of men to women in the national pool of athletes is 15:7. If there are 72 more men than women, how many athletes are there in the national pool?  
A. 189 B. 198√  
●SOLUTION(s)●  
●15-7=8●  
●15+7=22●  
●Total: 72●  
●72 ÷ 8 X 22●  
●9 X 22●  
●198 athletes●

45. Two numbers are in the ratio of 3:5. If their difference is 28, what is the bigger number?  
A. 60 B. 70√  
●SOLUTION(s)●  
●(difference) ÷ (how many numbers) = (answer) X (ratio of 1st number) = (sum of 1st number)●  
●28÷2=14X3=42●  
●(difference) ÷ (how many numbers) = (answer) X (ratio of 2nd number) = (sum of 2nd number)●  
●28÷2=14X5=70●  
●sum of 1st number = 42 (smaller number)●  
●sum of 2nd number =   
70 (bigger number)●  
●70 (bigger number)●

PART 3: GENERAL INFORMATION  
46. The groundbreaking ceremony of the newly established international airport in Bicol Region was exactly located in town of Daraga. Daraga is part of the province of Camarines Sur.  
A. True B. False√  
●(Daraga town is part of the province of Albay)●

47. The current Vice President of the Republic of the Philippines and the current Housing Secretary is only one person.  
A. True B. False√  
●(Leni Robredo is the current VP of RP but she was the FORMER Housing Secretary)●

48. Donald J. Trump was elected as the 45th President of the United States of America.  
A. True√ B. False

49. Rodrigo Duterte was elected as the 16th President of the Republic of the Philippines.  
A. True√ B. False

50. Leni Robredo was elected as the 16th Vice President of the Republic of the Philippines.  
A. True B. False√  
●(14th VP of RP)●

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ANSWER KEY FOR THE 5TH 50-ITEM QUIZ/LAST QUIZ (PLUS ADDITIONAL 60 ITEMS) WITH EXPLANATIONS AND SOLUTIONS◆

PART 1: ENGLISH  
1. Most of all I like cars. I've got one. \_\_\_\_\_ is my greatest passion and hobby.  
A. He  
B. Hers  
C. She√  
D. Him  
E. His  
●(On rare ocassions, we use gendered pronouns to express our relation to some things very emotionally. We should remember that there are 3 genders in English: feminine, masculine and neutral. The word 'car' is of feminine gender.)●

2. Don't run! The dog \_\_\_\_ get furious.  
A. can  
B. could  
C. might  
D. may√  
E. must  
●(We use the modal verb 'may' when it is possible that something will happen.)●

3. Jake is being very \_\_\_\_ today!  
A. dispolite  
B. impolite√  
C. mispolite  
D. unpolite  
E. inpolite  
●(We should remember that the adjective 'polite' is used with the prefix 'im-'. )●

4. Sam looked at Sandy \_\_\_\_.  
A. angrily√  
B. angriness  
C. angry  
D. angryful  
E. angryness  
●(We use adverbs to describe time, degree, manner, etc. In other words, adverbs help us get more information about the action or the place (where, when, how,how often, etc.) Many adverbs are formed from adding '-ly' or '-ily' to the adjective.)●

5. Our boss announced that \_\_\_\_ those employeed who came late for work would have their salary deducted accordingly.  
A. although  
B. likewise  
C. henceforth√  
D. in as much as  
E. notwithstanding  
●('Henceforth' means 'from this time on'. We use this linking word to introduce a new idea that differs from something that was ordinary and habitual before.)●

6. We may not finish repairs in time. We need \_\_\_ extra hands.  
A. few  
B. some√  
C. a little  
D. any  
E. much  
●(We use 'some' in positive sentences and 'any' in negative ones before countable or uncountable nouns. 'Much' and 'a little' are used before uncountable nouns.)●

7. A departure \_\_\_\_ normal blood pressure can cause many diseases.  
A. from√  
B. in  
C. for  
D. of  
E. to  
●(We should remember that some nouns are used with specific prepositions after them: 'departure from'.)●

8. According to the schedule, we \_\_\_\_ (to depart) from Beijing at 9 o'clock in the morning and \_\_\_\_\_ (to arrive) to Jakarta at 12 p.m. \_\_\_\_ (you/to meet) us?  
A. will depart/arrive/Will you meet  
B. depart/arrive/Do you meet  
C. depart/arrive/Will you meet√  
D. will depart/will arrive/Will you meet  
E. will depart/Will arrive/Are you meeting  
●{1, 2. When we talk about scheduled events (planes, trains, etc.), we use the Simple Present Tense. 3. When we make predictions or simple statements about the future, we use the Simple Future Tense}●

9. Choose two forms of the verb 'to frostbite' according to the order: Past Simple - Past Participle   
A. frostbited - frostbited  
B. frostbit - frostbitten√  
C. frostbitten - frostbit  
D. frostbate - frostbitten  
E frostbought - frostbought  
●(to frostbite - frostbit - frostbitten)●

10. Kate is looking for a job and a place to move in. He doesn't want to be overly dependent \_\_ his parents.  
A. of  
B. at   
C. on√  
D. from  
E. with  
●(We should remember that some adjectives are used with specific prepositions after them: 'dependent on'.)●

11. My nephew wants \_\_\_\_\_ (to play) football again.  
A. plays  
B. playing  
C. will play  
D. to play√  
E. play  
●('Want' requires the Infinitive - to + Present Tense of the Verb. We cannot use the Gerund - Verb +ing with this verb.)●

12. The actress, \_\_\_\_\_ Jam likes, is Angelina Jolie.  
A. whom√  
B. that   
C. which   
D. whose  
E. what  
●('What' is a question word. 'Which' is used for animals and objects.'That' is used for animals and things. 'Whose' refers to possession. 'Whom' is used as an object.)●

13. We planned \_\_\_\_ (to get) there by 8 p.m.  
A. goes  
B. got  
C. to get√  
D. get  
E. getting  
●('Plan' requires the Infinitive - to + Present Tense of the Verb.)●

14. She got married \_\_\_ the age \_\_\_ 30.  
A. on/of  
B. at/of√  
C. in/for  
D. since/of  
E. by/for  
●(It is correct to say 'at the age of'.)●

15. Each of the children \_\_\_\_\_ a gift.  
A. received√  
B. receive  
C. receives  
D. will receives  
E. will receive  
●('Each' can be used with plural verb but must be followed by 'of'. in the past participle form of the verb in this sentence.)●

16. Plural form of the noun 'advice'  
A. advices  
B. advise  
C. advice√  
D. more advice  
E. much advice  
●(Some nouns are the same in both forms.)●

17. Dean \_\_\_\_\_ (to decide) on a career of a software developer when he \_\_\_\_ (to be) twenty four. It \_\_\_\_ (not/to be) difficult because he \_\_\_\_\_ (to graduate) from IT college before.  
A. decided/had been/wasn't/had been graduating  
B. decided/was/wasn't/had graduated√  
C. decided/was/wasn't/had been graduating  
D. decided/had been/wasn't/had graduated  
E. decided/was/hadn't been/had graduated  
●(1. We use the Simple Past Tense for short actions in the past and actions which happened in a completed period of time: decided/was 24/was difficult. 2. We use the Past Perfect Tense to show that one action happened before another one: first he had graduated from the college and then he decided on a career)●

18. The vase was very fragile. June placed it down on the table.  
A. gingerly√  
B. abruptly  
C. accidentally  
D. bluntly  
E. harshly  
●('Gingerly' means 'carefully')●

19. \_\_\_\_\_\_ brother is married to Annie's sister  
A. Anne  
B. Anne'  
C. Anne's√  
D. Annes'  
E. Annes  
●(In English, possessive adjectives and pronouns refer to the possessor, not the object or person that is possessed.)●

20. Choose the correct one.  
A. two-story building  
B. two storey building  
C. two stories building  
D. two story building  
E. two-storey building√  
●{amount + hypen/dash (-) + singular form of the noun}●

21. I didn't agree with Rick's words. I took the objection \_\_ his remarks.  
A. with  
B. to√  
C. in  
D. for  
E. at  
●(We should remember that some nouns are used with specific prepositions after them: 'objection to'.)●

22. I don't want \_\_\_\_\_ (to quarrel) with you but you are so wrong.  
A. to fall back on   
B. to fall back in  
C. to fall for  
D. to fall out√  
E. to fall in  
●(The phrasal verb 'to fall out with' means 'to quarrel')●

23. Choose the correct one.  
A. Scarely has the rain stopped when I went out.  
B. Scarely have the rain stops when I went out.  
C. Scarely have the rain stopped when I went out.  
D. Scarely had the rain stops when I went out.  
E. Scarely had the rain stopped when I went out.√  
●(Some conjunctions come in pairs - 'scarely... when'.)(had - stopped)●

24. Justin \_\_\_ (to work/usually) at the office but he \_\_\_\_ (to work) at home daily.  
A. usually works/has worked  
B. usually works/is working√  
C. is usually working/has worked  
D. has usually worked/is working  
E. is usually working/works  
●(1. We use the Present Simple Tense to talk about permanent and regular situations. 2. We use the Present Continuous Tense to refer to temporary situations in the present.)●

25. It is an 'article' use before nouns mentioned for the second time.  
A. a  
B. an  
C. A & B   
D. the√  
E. no article

26. Choose the correct sentence.  
A. He is an intelligent boy in our class.  
B. He is more intelligent boy in our class.  
C. He is most intelligent boy in our class.  
D. He is much intelligent boy in our class.  
E. He is the most intelligent boy in our class.√  
●(Superlative adjectives take the article 'the'.)●

27. Jim considered \_\_\_\_ (to change) his job.  
A. change  
B. to change  
C. changing√  
D. changed  
E. to changed  
●('Consider' requires the Gerund - Verb +ing. In this case, the Gerund is used as the object of the verb.)●

28. Choose the correct sentence.  
A. This fabric is superior from that fabric.  
B. This fabric is superior to that fabric.√  
C. This fabric is superior than that fabric.  
D. This fabric is superior with that fabric.  
E. This fabric is superior on that fabric.  
●(The adjectives 'superior' and 'inferior' take the preposition 'to', not 'than'.)●

29. The dog was totally obedient \_\_\_\_ Mike.  
A. with  
B. on   
C. to√  
D. at  
E. from  
●(We should remember that some adjectives are used with specifiv prepositions after them: 'obedient to'.)●

30. Jude is only 5 but he has already learned a few poems \_\_\_ heart.  
A. by√  
B. in  
C. with  
D. at  
E. on  
●('By heart' means 'to memorize by rot, word for word'.)●

31. Anna bought a nice \_\_\_\_ skirt.  
A. metalous  
B. metal  
C. metallic√  
D. metallum  
E. metally  
●(We mean that Anna bought a skirt which colour is 'metallic'. 'Metal' means 'made of metal'. It is impossible to use 'metally', 'metalous', 'metallum')●

32. Zen \_\_\_\_ (to come) home before Jen \_\_\_\_\_ (to finish) cooking.  
A. came/had finished  
B. had come/had finished  
C. was coming/was finishing  
D. had come/finished√  
E. came/finished  
●{The first action (Zen had come home) happened earlier than the second one (Jen finished cooking). To shis sequence, we usspe Past Perfect Tense and Past Simple Tense one after another.}●

33. Oh, what a lovely chicken! \_\_\_\_ is yellow and bright like the Sun!  
A. He  
B. It√  
C. Her  
D. She  
E. Him  
●(On rare ocassions,we use gendered pronouns to express our relation to some things very emotionally. We should remember that there are 3 genders in English: feminine, masculine and neutral. The word 'chicken' is of neutral gender.)●

34. Choose the correct one.  
A. aides-de-camp√  
B. aides-de-camps  
C. aide de camp  
D. aide de camps  
E. aides de camp  
●{Plural form of the Noun + de (-) camp.}●

35. I'm very busy today. I \_\_\_\_stay at work till night.  
A. may  
B. must  
C. have to√  
D. can  
E. might  
●(We use the modal verb 'have to' when it is not our idea to do something, when we are forced to do something by somebody or by circumstances)●

36. It is an 'article' use before proper nouns.  
A. a  
B. an  
C. A & B  
D. the  
E. no article√

37. Choose the correct one.  
A. I saw an old woman who was too weak.√  
B. I saw an old woman that was too weak.  
C. I saw an old woman whom was too weak.  
D. I saw an old woman which was too weak.  
E. I saw an old woman whose was too weak.

38. Plural form of the noun 'radius'.  
A. radii  
B. radiuses  
C. A & B√  
D. radi  
E. A, B & D  
●(There are many nouns which have Greek or Latin origin. As a rule, they keep own endings.)●

39. Father resisted \_\_\_\_ (to ask) for help.  
A. asking√  
B. will ask   
C. ask  
D. to ask  
E. asked  
●('Resist' requires the Gerund - Verb +ing. In this case, the Gerund is used as the object of the verb.)●

40. It is an 'article' use before names of squares.  
A. a  
B. an  
C. A & B  
D. the  
E. no article√

41. Choose two forms of the verb 'to according to the order: Past Simple - Past Participle  
A. risen - rose  
B. rose - rose  
C. risen - risen  
D. rose - risen√  
E. rise - risen  
●(to rise - rose - risen)●

42. The Queen of Great Britain \_\_\_\_\_ (to live) in Buckingham Palace. I \_\_\_\_\_ (never/to see) it but I \_\_\_ (always/to dream) about it.  
A. is living/have never seen/have always dreamt  
B. lives/have never seen/have always dreamt√  
C. lives/have never seen/always dreaming  
D. lives/never saw/have always dreamt  
E. lives/never saw/have always dreaming  
●(We use the Present Simple Tense to talk about facts and things that are generally true - we all know that the Queen of England lives in Buckingham Palace. 2. We use the Present Perfect Tense to talk about actions that started in the past and have the connection with the moment of speaking: I didn't see the Palace in the past and still dream about it in the past.)●

43. Choose the correct one.  
A. mothers-in-law√  
B. mother in law  
C. mother in laws  
D. mothers-in-laws  
E. mother-in-laws  
●{Plural form of the noun + (-) in (-) law}●

44. \_\_\_\_\_ the weather forecasts the city was hit by huge snowstorm.  
A. therefore  
B. however  
C. despite√  
D. because  
E. although  
●(When we want to show there is a surprising contrast between two statements in one sentence, we use 'although, though, eventhough' and 'despite/in spite of + -ing/noun/pronoun'. Other given linking words or conjunctions do not relate to the meaning of the sentence.)●

45. The 'room of the boys' is the same as?  
A. The boys' room√  
B. The boy's room  
C. The boys room  
D. The boys's room  
E. The boy's rooms  
●(For names ending in -s. In speaking, we add the sound /z/ to the name, but in writing, it is possible to use either 's or just '. The 's form is more common. e.g. Thomas's book, James's shop.)●

46. By the time Kim \_\_\_\_\_ (to leave) she \_\_\_\_ (to be) in Baguio City for a year.  
A. will leave/will be  
B. leaves/will be  
C. leave/will be  
D. will leave/will have been  
E. leaves/will have been√  
●{'Leaves' (Simple Present Tense), 'will have been' (Future Perfect Tense)}●

47. Choose the correct sentence.  
A. I went to the store to buy some stationary.  
B. I went to the store to buy some stationery.√  
C. I want to the store to buy some stationries.  
D. I went to the store to buy some stationaries.  
E. I went to the store to buy some stationeries.  
●('Stationery' does not have a plural form.)●

48. It is an 'article' use to talk about what someone is or what job they do.  
A. a  
B. an  
C. A & B√  
D. the  
E. no article  
●(an engineer, a farmer)●

49. She needs \_\_\_\_ (to complete) this project until the end of this month.  
A. to fight for  
B. to carry out√  
C. to hold on  
D. to find out  
E. to keep on  
●(The phrasal verb 'to carry out' means 'to complete something')●

50. It was hard but we have done \_\_\_\_ of the work finally. Now, we have less than a half.  
A. many  
B. a little  
C. few  
D. much√  
E. any  
●('Many' is used before countable nouns. 'Much' and 'a little' - before uncountable. 'A little' doesn't relate to the meaning. We use 'any' in interrogative and negative sentences)●

PART 2: MATHEMATICS  
51. 2 3/4 ÷ 3 1/2  
A. 3/14  
B. 5/14  
C. 9/14  
D. 11/14√  
E. 13/14  
●SOLUTION(s)●  
●First, we have to convert mixed fractions/numbers which consist of a whole number, a numerator & a denominator ) 2 3/4 & 3 1/2 to improper fractiond which is (numerator is greater than the denominator)●  
●(whole number) multiplied by (denominator) plus (numerator) over (denominator)●  
●2 3/4 (2 is the whole number) (4 is the denominator) (3 is the numerator) over (4 which is the denominator)●  
●Therefore, (2) multiplied by (4) plus (3) over (4) = 2X4+3 over 4 = 8+3 over 4= 11/4●  
●3 1/2 (3 is the whole number) (2 is the denominator) (1 is the numerator) over (2 which is the denominator) Therefore, (3) multiplied by (2) plus (1) over (2) = 3X2+1 over 2 = 6+1 over 2 = 7/2●  
●11/4 ÷ 7/2●  
●(In division of fractions, we have to get the reciprocal form of the fraction after (÷). In this quiz, the fraction after (÷) is 7/2. The reciprocal form of 7/2 is 2/7).  
●Therefore●  
●(11/4) X (2/7)●  
●(numerator---11) multiplied by (numerator---2) over (denominator---4) multiplied by (denominator---7)  
●11X2 over 4X7●  
●22/28●  
●(We have to reduce 22/28 into lowest term by thinking a number that can be divided to the both of them & that is 2●  
●22÷2 over 28÷2 = 11/14●  
●11/14●

52. 4, 8, 22, 12, 16, 22, 20, 24, \_, \_  
A. 28, 22  
B. 24, 22  
C. 22, 28√  
D. 22, 24  
E. 24, 28  
●SOLUTION(s)●  
●We have to look first at the numbers in the series if there is repeated, interpolated, if there is any●  
●22 is a random number interpolated, repeated in the series. That means, that the first next number is 22●  
●We have to look for all the two numbers at the left side of 22●  
●We have 4 & 8, 12 & 16, 20 & 24. 4 is added in from first to the second number that means the other number in the series is 28●  
●Therefore, we have 22 &28●  
●22, 28●

53. The circle has a radius of 5.6 meters. Find its area.  
A. 98.43 m^2  
B. 98.44 m^2  
C. 98.45 m^2  
D. 98.46 m^2  
E. 98.47 m^2√  
●SOLUTION(s)●  
●Use π = 3.14●  
●radius = r = 5.6 m●  
●FORMULA●  
●(AREA OF A CIRCLE)●  
●A = πr^2●  
●A = (3.14)(5.6 m)^2●  
●A = (3.14)(5.6 m)(5.6 m)●  
●A = (3.14)(31.36 m^2)●  
●A = 98.4704 m^2●  
●The answer must be round off up to two decimal places●  
●We look for the 2nd & 3rd number, that is 7 & 0●  
●Therefore, the answer is●  
●A = 98.47 m^2●

54. Scientific Notation: Round off 0.00000565 up to one decimal place.  
A. 5.6 X 10^ - 6√  
B. 5.6 X 10^ -5   
C. 5.6 X 10^ - 4  
D. 5.7 X 10 ^ -6  
E. 5.7 X 10^ - 5  
●SOLUTION(s)●  
●We have to move the decimal point to the right until we reach the "point(.)" between two numbers, that is 5 & 6 and another 5●  
●We have to count how many times we move the decimal point to the right. In this quiz we have to move the decimal point 6 places to the right●  
●Scientific notation has a standard form: m X 10^n, "number" X 10 ^n●  
●5.65 is the result●  
●In rounding off numbers, we have to look at how many decimal places is being asked. In this quiz, up to one decimal place is being asked. Therefore, we have 5 & 6●  
●In rounding off numbers●  
●If the number to be rounded off is 0-4, we have to retain that number●  
●If the number to be rounded off is 5-9,we have to add 1 to that number●  
●EXCEMPTIONS●  
●If the number to be rounded off is an even number (0,2,4,6,8) & at the right side is 5, we have to retain that number●  
●If the number to be rounded off is an odd number (1,3,5,7,9) & at the right side is 5, we have to add 1 at that number●  
●Therefore, we have 5.6●  
●In scientific notation, if the given counting number (1-9) is not a whole number or in decimal form, we have to indicate a negative (-) sign●  
●5.6 X 10^ -6●

55. The ratio of two numbers is 5:7. If their difference is 36, what is their sum?  
A. 246  
B. 236  
C. 226  
D. 216√  
E. 206  
●SOLUTION(s)●  
●(difference) ÷ (how many numbers) = (answer) X (ratio of 1st number) = (sum of 1st number)●  
●36÷2=18X5=90●  
●(difference) ÷ (how many numbers) = (answer) X (ratio of 2nd number) = (sum of 2nd number)●  
●36÷2=18X7=126●  
●(sum of 1st number) + (sum of 2nd number) = sum of them●  
●90+126●  
●216●

56. Add the ff. numbers & round off up to one decimal place.  
135.797+24.686+535.3  
A. 694.7  
B. 695.8√  
C. 695.7  
D. 694.8  
E. 696.7  
●SOLUTION(s)●  
●695.783●  
●695.8●  
●See the explanations in Question #54 or #84 on how to round off numbers●

57. How many significant figures does 1.0000 have?  
A. 1  
B. 2  
C. 3  
D. 4  
E. 5√  
●SOLUTION(s)●  
●If the given number is not a whole number or with a decimal point, all the numbers are significant, meaning all numbers must be counted (Ex. 1.0000 has 5 significant figures)●  
●If the given number is a whole number, all the numbers are significant, meaning, all numbers must be counted (Ex. 1234 has 4 significant figures)●  
●If the given number is a whole number, all the numbers are significant except zero (0). (Ex. 100000 has 1 significant figures)●

58. Jake has 18 bills im her wallet worth 20 pesos & 50 pesos. If the bills have a sum of 660 pesos, how many 20-peso & 50-peso are there?  
A. 7 & 11  
B. 5 & 13  
C. 6 & 12  
D. 8 & 10√  
E. 4 & 14  
●SOLUTION(s)●  
●Let●  
●amount: 20, number of 20-peso bills:●  
●total: (20) X (x) = 20x  
●amount: 50●  
●number of 50-peso bills: 18-x●  
●total: 50(18-x)●  
●20x+50(18-x)=660●  
●We have to apply the distributive property of multiplication. That is:  
a (b+c) = ab+ac  
a (b-c) = ab-ac●  
●20x+50(18-x)=660●  
●20x+900-50x=660●  
●-30x=660-900●  
●-30x=-240●  
●-30 and -240 are both divisible by -30●  
●-30x/-30 = -240/-30●  
●x = 8● (20-peso bills)  
●18-x = 18-8 = 10●  
●10● (50-peso bills)  
●8 & 10●

59. Find the mean of the ff. numbers:  
59869, 568, 709, 35  
A. 15925.25  
B. 15952.25  
C. 15295.25√  
D. 15259.25  
E. 15592.25  
●SOLUTION(s)●  
●(Mean is the average)●  
●(We have to get the sum of the given numbers & divide it to how many numbers are there)●  
●(59869+568+709+35) ÷ (4)●  
●61181 ÷ 4●  
●15295.25●

60. Annie got 55 correct answers & 25 incorrect answers. What was the percentage of correct answers? (Round off to the nearest hundredths)  
A. 68.75%√   
B. 68.73%  
C. 68.77%  
D. 68.76%  
E. 68.74%  
●SOLUTION(s)●  
●Correct answers: 55●  
●Incorrect answers: 25●  
●Total number: 55+25 = 80●  
●55÷80●  
●0.6875●  
●Move the decimal point two places to the right●  
●68.75●  
●5 is the hundredths place so, the answer is 68.75●  
●68.75%●

61. What is 27% of 1500?  
A. 385  
B. 395  
C. 405√  
D. 415  
E. 425  
●SOLUTION(s)●  
Given:  
a number: 1500  
percentage rate: 27%  
reduced number: ?  
●(1500) X (27%--move the decimal point two places to the left--0.27) = reduced number●  
●1500 X 0.27●  
●405●

62. Think of a number. Divide it by 8. Then subtract 4 from the quotient. The result is 5. What is the number?  
A. 72√  
B. 64  
C. 56  
D. 48  
E. 40  
●SOLUTION(s)●  
●Result is 5 & find the inverse of the ff.:●  
●inverse of "subtract 4" is "add 4". So, 5+4 = 9●  
●inverse of "divide by 8" is "multiply by 8". So, 9X8 = 72●  
●72÷8-4 = 9-4 = 5●  
●So, the answer is 72●

63. Find the median of the ff. numbers:  
2648, 2846, 2486, 2864  
A. 2477  
B. 2447  
C. 2747√  
D. 2777  
E. 2774  
●SOLUTION(s)●  
●Median is the middle number. If there are two numbers at the middle, we have to divide them by 2. (To get the median, we have to arrange the given numbers from lowest value to highest value)●  
●2486, 2648, 2846, 2864●  
●(2648 & 2846 are the numbers at the middle. We have to add them and divide them by 2 to get the median)●  
●(2648+2846) ÷ (2)●  
●5494 ÷ 2●  
●2747●

64. The average age of 36 students in a group is 14 years old. When teacher's age ia included, the average increases by one. What is the teacher's age in years?  
A. 55 y/o  
B. 51 y/o√  
C. 53 y/o  
D. 54 y/o  
E. 52 y/o  
●SOLUTION(s)●  
●Number of students: 36●  
●Average age: 14●  
●36 X 14 = 504 (total age of students)●  
●(The average age increases by one, teacher's age is included)●  
●37 X 15 = 555●  
●555-504= 51●  
●51 y/o (teacher's age)●

65. If a mother gave P1,980.00 to her 3 children in the ratio 2:4:3. How much will the second child get?  
A. P220  
B. P1100  
C. P880√  
D. P440  
E. P660  
●SOLUTION(s)●  
●Ratio of the 1st child: 2x●  
●Ratio of the 2nd child: 4x●  
●Ratio of the 3rd child: 3x●  
●Total/Sum: 1980●  
●2x + 4x + 3x = 1980●  
●9x = 1980●  
●(9 and 1980 are both divisible by 9)●  
●9x/9 = 1980/9●  
●x = 220●  
●2x = 2(220) = P440 (1st child)●  
●4x = 4(220) = P880 (2nd child)●  
●3x = 3(220) = P660 (3rd child)●  
P880 (2nd child)

66. Find the perimeter of an scalene triangle whose sides measure 57.35 cm, 65.27 cm & 85.42 cm.  
A. 208.04 cm√  
B. 207.94 cm  
C. 207.04 cm  
D. 208.94 cm  
E. 206.04 cm  
●SOLUTION(s)●  
●(Scalene triangle is a tringle with no (0) equal sides)●  
●FORMULA●  
●P = s1+s2+s3●  
●P = 57.35 cm + 65.27 cm + 85.42 cm●  
●P = 208.04 cm●

67. How many mode does the ff. numbers have?  
2469, 2649, 2946, 2694, 2964, 2496, 2649, 2694  
A. 0  
B. 1  
C. 2√  
D. 3  
E. 4  
●SOLUTION(s)●  
●(Mode is the number that most frequently appeared or ocurred in the given numbers)●  
●(If there is one number most frequently appeared, that number is the mode)●  
●If there are two numbers mostly frequently appeared, that numbers are the mode)●  
●If there is no number most frequently appeared, there is no mode)●  
●In this quiz, there are two numbers most frequently appeared. They are 2649 & 2694.●  
●2649 & 2694●  
●The answer is 2●

68. A water tank is 7/8 full. When 21 liters is drawn out, tank is 5/8 full. What is the total capacity of the tank in liters?  
A. 80 liters  
B. 81 liters  
C. 82 liters  
D. 83 liters  
E. 84 liters√  
●SOLUTION(s)●  
●Let●  
●tank capacity: x●  
●GIVEN●  
●7/8●  
●21 liters●  
●5/8●  
●7/8x - 21 = 5/8x●  
●(We have to eliminate the fractions in the equation. To be able to do that, we have to look for the numerators of the fractions 7/8 & 5/8, & that is 8 & 8. We multiply both sides of the equation by 8.●  
●8 (7/8x - 21 = 5/8x) 8●  
●We have to apply the distributive property of multiplication on both sides of the equation,  
that is,  
a (b+c) = ab+ac  
a (b-c) = ab-ac●  
●8 (7/8x - 21 =5/8x) 8●  
●All the number "8" in both sides of the equation must be cancelled out, but we have to still multiply "8" in the number(s) that are left in the equation, & that is "21"●  
●8 (7/8x - 21 = 5/8x) 8●  
●7x - 168 = 5x●  
●7x-5x = 168●  
●2x = 168●  
●(2 & 168 are both divisible by 2)●  
●2x/2 = 168/2●  
●x = 84●  
●84 liters●  
●Checking●  
●7/8x - 21 = 5/8x●  
●7/8(84/1) - 21 = 5/8(84/1)●  
●588/8 - 21 = 420/8●  
●LCD: 8 (We multiply it to both sides of the equation)●  
●8 (588/8 - 21 = 420/8) 8●  
●All the number "8" in both sides of the equation must be cancelled out, but we have to still multiply "8" in the number(s) that are left in the equation, & that is "21"●  
●8 (588/8 - 21= 420/8) 8●  
●588 - 168 = 420●  
●420 = 420●  
OR  
●7/8 - 5/8 = 2/8 (LCD is 2) = 1/4●  
●21/1 ÷ 1/4●  
●21/1 X 4/1●  
●84/1●  
●84 liters●

69. A pair of dress marked P1,650.00 was bought for P660.00. What was the percent discount?  
A. 60%√   
B. 45%  
C. 50%  
D. 55%  
E. 40%  
●SOLUTION(s)●  
●Original/List/Marked Price: P1650.00●  
●Percent Discount: ?●  
●Discounted Price: P660.00●  
●(Original/List/Marked Price) X (Percent Discount) = (Discounted Price)●  
●(We have to derive another formula by cancellation)●  
●(Original/List/Marked Price) X (Percent Discount) over (Original/List/Marked Price) = (Discounted Price) over (Original/List/Marked Price)●  
●(Original/List/Marked Price) has been cancelled out on the left side of the equation. Therefore,●  
●(Percent Discount) = (Discounted Price) over (Original/List/Marked Price)●  
●(Percent Discount) = (660) over (1650)●  
●(Percent Discount) = 0.40 (move the decimal point two places to the right) = 40%●  
●(We have to subtract 100% (constant) to 40%●  
Percent Discount = 100%-40% = 60%  
●60%●

70. 2, 23, 6, 20, 10, 17, 14, 14, 18, \_\_\_  
A. 12  
B. 11√  
C. 13  
D. 10  
E. 14  
●SOLUTION(s)●  
●The given series is an alternating series●  
●2, 6, 10, 14, 18 is an addition series. Each number increases by 4.●  
●23, 20, 17, 14, \_\_\_ is a subtraction series. Each number decreases by 3. So, the answer is 11.●  
●11●

71. There are 38 items in a test. Jake got 25 mistakes. What percent of the answers are correct? (Round off to the nearest whole number)  
A. 31%  
B. 32%  
C. 33%  
D. 34%√  
E. 35%  
●SOLUTION(s)●  
●Incorrect answer: 25●  
●(Number of items)less (Incorrect answers) = Correct answers = 38-25 = 13●  
●Correct answers: 13●  
●13÷38●  
●0.3421●  
●(Move the decimal point two places to the right)●  
●34.21%●  
●(4 is tens place & the number at the right of it is 2)●  
●So, we have 34%●  
●(See the explanations on question #54)●

72. Find the median of the ff. numbers:  
1357, 3571, 5731, 1537, 5371, 3715  
A. 3623   
B. 3633  
C. 3643√   
D. 3653  
E. 3663  
●SOLUTION(s)●  
●(See the explanations in Question #63)●  
●1357, 1537, 3571, 3715, 5371, 5731●  
●3571 & 3715 are the median●  
●3571 + 3715●  
●7286 ÷ 2●  
●3643●

73. The difference between three-fourths of a number and one-eight of the same number is 65. Find the number.  
A. 104√   
B. 124  
C. 144  
D. 114  
E. 134  
●SOLUTION(s)●  
●3/4x - 1/8x = 65●  
●(LCD: 8)●  
●{We have to multiply "8" to both sides of the equation to be able to cancel out the fraction(s)}  
●8 (3/4x - 1/8x = 65) 8●  
●(We have to apply the distribution property of multiplication.  
That is, a (b+c) = ab+ac  
a (b-c) = ab-ac●  
●8 (3/4x - 1/8x = 65) 8●  
●24/4x - 8/8x = 520●  
●6x-x=520●  
●5x=520●  
●(5 and 520 are both divisible by 5)●  
●5x/5 = 520/5●  
●x=104●  
●Checking:●  
●3/4(104) - 1/8(104) = 65●  
●312/4 - 104/8 = 65●  
●78-13=65●  
●65=65●

74. 9643.25 ÷ 4.5 (Round off to the nearest whole number)  
A. 2142   
B. 2143√  
C. 2144   
D. 2145  
E. 2146  
●SOLUTION(s)●  
●(See the explanations in Question #54)●  
●2142.94●  
●"2nd" number 2 is the tens place & we have look for the number at the right side of it & that is 9●  
●So, the answer is●  
●2,143●

75. 15.23, 16.46, 17.69, 18.92  
A. 20.18  
B. 20.16  
C. 20.15√   
D. 20.14  
E. 20.17  
●SOLUTION(s)●  
●Each number increases by 1.23●  
●15.23 (+1.23) 16.46 (+1.23) 17.69 (+1.23) 18.92 (+1.23)●  
●20.15●

76. A DVD player is on sale at a price of P1750.00. If the discount is 60%, what is the original price of the DVD player?   
A. P4375.00√   
B. P4537.00  
C. P4357.00  
D. P4753.00  
E. P4573.00  
●SOLUTION(s)●  
Given:  
Original/List/Marked Price: ?  
Percent Discount: 60% {Must be subtracted from 100% (constant)} = 100%-60%=40% (move the decimal point two places to the left = 0.40)  
Discounted Price: P1750.00  
●(Original/List/Marked Price) X (Percent Discount) over (Percent Discount) = (Discounted Price) over (Percent Discount)●  
●(We have to derive another formula by cancellation)●  
●(Original/List/Marked Price) X (Percent Discount) over (Percent Discount) = (Discounted Price) over (Percent Discount)●  
●(Percent Discount) has been cancelled out on the left side of the equation. Therefore,●  
●(Original/List/Marked Price) = (Discounted Price) over (Percent Discount)●  
●Original/List/Marked Price = 1750 over 0.40●  
●Original/List/Marked Price = 1750/0.40  
●Original/List/Marked Price = P4375.00●  
●P4375.00●

77. How many significant figures does 0.0005 have?  
A. 2  
B. 5  
C. 3   
D. 1√  
E. 4  
●SOLUTION(s)●  
●Zero(s) after decimal point with another zero before decimal point are not significant if there are counting numbers (1-9) after●  
●0.00005 has 1 significant figure●  
●See other explanations in Question #57 regarding significant figures●

78. Find the mean of the ff. numbers:  
357.9, 579.3, 975.3, 739.5  
MEAN  
A. 673   
B. 663√  
C. 653   
D. 643  
E. 633  
●SOLUTION(s)●  
●(See the explanations in Question #59)●  
●357.9 + 579.3 + 975.3 + 739.5●  
●2652 ÷ 4●  
●663●

79. 11 - 5 2/9  
A. 4 7/9  
B. 4 5/9  
C. 5 7/9√   
D. 5 5/9  
E. 6 7/9  
●SOLUTION(s)●  
●11 is equal to 10 9/9●  
●10 9/9 - 5 2/9●  
●(whole number--10) less (whole number--5) = 5●  
●(numerator--9) less (numerator--2) = 7●  
●(denominator--9) and another (denominator--9) must be copy/retain = 9●  
●So, the answer is●  
●5 7/9●

80. A box contains 32 bills consisting of P20 & P50. The total amount of money in the box is P1,000. How many bills of each kind are there?  
A. 12 & 20√  
B. 10 & 22  
C. 13 & 19  
D. 11 & 21  
E. 14 & 18  
●SOLUTION(s)●  
●Let●  
●amount: P50, number of 50-peso bills: x●  
●(50) X (x) = 50x●  
●amount: P20, number of 20-peso bills: 32-x●  
●20 (32-x)●  
●50x+20(32-x)=1000●  
●We have to apply the distribution property of multiplication. That is:  
a (b+c) = ab+ac  
a (b-c) = ab-ac●  
●50x+20(32-x)=1000●  
●50x+640-20x=1000●  
●50x-20x=1000-640●  
●30x=360●  
●(30 & 360 are both divisible by 30)●  
●30x/30 = 360/30●  
●x = 12● (P50 bills)  
●32-x = 32-12 = 20●  
●20● (P20 bills)  
●12 & 20●

81. Convert 3 5/1000 to decimal.  
A. 3.005√  
B. 30.05  
C. 300.5  
D. 3000.5  
E. 30000.5  
●SOLUTION(s)●  
●(3) X (1000) plus (5) over (1000)●  
●3 X 1000 + 5 over 1000●  
●3000 + 5/1000●  
●3005/1000●  
●3005 ÷ 1000●  
●3.005●

82. Coconut Juice costs P5.00 in one shop and P7.00 in another shop, what is the percentage difference?  
A. 22.22%  
B. 44.44%  
C. 33.33%√  
D. 55.55%  
E. 11.11%  
●SOLUTION(s)●  
●5-7= -2 = 2●  
●5+7=12/2= 6●  
●2/6 = 0.3333 (move the decimal point two places to the right) = 33.33%●  
●33.33%●

83. June repacks a 70 kg sack of sugar into small packs of 560 g. How many small packs can be made?   
A. 105  
B. 125√  
C. 145  
D. 135  
E. 115  
●SOLUTION(s)●  
●(We have convert kilogram(kg) to gram(g)●  
●1 kg = 1,000 g●  
●70 kg X 1000 = 70,000 g  
●560 g●  
●70,000÷560●  
●125●

84. Scientific Notation: Round off 123456 up to two decimal places  
A. 1.24 X 10^5  
B. 1.24 X 10^4  
C. 1.23 X 10^3  
D. 1.23 X 10^5√  
E. 1.23 X 10^4  
●SOLUTION(s)●  
●We have to move the decimal point to the left until we reached the point(.) between two numbers  
●We have move to move the decimal point 5 places to the left●  
●We have 1.23456●  
●We must look for the 2nd & 3rd numbers after decimal point. That is, 3 & 4●  
●In rounding off numbers (See the explanations in Question #54●  
●The answer is 1.23 X 10^5●  
●1.23 X 10^5●

85. The ages of Anna, Annie, Anne are consecutive integers. The sum of their ages is 153. What are their ages?   
A. 49, 50, 51  
B. 50, 51, 52√  
C. 51, 52, 53  
D. 52, 53, 54  
E. 53, 54, 55  
●SOLUTION(s)●  
●Total/Sum: 153●  
●Number of persons: 3●  
●153÷3= 51●  
●51-1 = 50●  
●51+1 = 52●  
●50, 51, 52●

86. Mr. Lee sold a LED TV for P52500, a washing mashine for P14700 and a DVD player for P14800. If he gets a 10% commission from his sales, how much did he earn?  
A. 8,200√  
B. 8,000  
C. 8,400  
D. 8,100  
E. 8,300  
●SOLUTION(s)●  
●P52,500+P14,700+P14,800●  
●P82,000●  
●P82,000 X 10% (0.10)●  
●P8,200●

87. 5 is to 16 as 25 is to \_\_\_  
A. 85  
B. 80√  
C. 75  
D. 90  
E. 70  
●SOLUTION(s)●  
●5:16 = 25:x●  
●(5) X (x) = (16) X (25)●  
●5x = 400●  
●(5 and 400 are both divisible by 5)●  
●5x/x = 400/5●  
●x = 80●  
OR  
●5 (X5) = 25●  
●16 (X5) = 80●

88. Jake wants to divide a wooden log, 8 1/2 meters long into 5 equal parts using terror blade. How long will each division be?  
A. 1 1/10  
B. 1 9/10  
C. 1 7/10√  
D. 1 5/10  
E. 1 3/10  
●SOLUTION(s)●  
●8 1/2 = 8 and (1/2 = 0.5)  
●8.5 ÷ 5 = 1.7 = 1 and 0.7 (7/10)  
●1 7/10●  
OR  
●8 1/2 ÷ 5●  
●17/2 ÷ 5/1 = 17/2 X 1/5 = 17/10●  
●1 7/10●

89. 7% of 24 is 24% of what number?  
A. 7√  
B. 8  
C. 5  
D. 4  
E. 6  
●SOLUTION(s)●  
●7% X 24 = 7% (move the decimal point two places to the left = 0.07●  
●0.07 X 24 = 1.68●  
●1.68/0.24 = 7●  
●7●

90. Find thd mode of the ff. numbers:  
3692, 9632, 6329, 3269, 6239, 9632, 3269, 3296, 6239, 3629  
A. 3269, 3629, 6239  
B. 6239, 3269, 3296  
C. 3269, 6239, 9632√  
D. 3269, 9632, 6239  
E. No mode  
●SOLUTION(s)●  
●(See the explanations in Question #67)●  
●3269, 6239, 9632●

91. Jim took a trip of 2,865 km. He traveled by train at 55 kph and three times that number of hours by plane at 300 kph. How many hours did the trip take?  
A. 14  
B. 12√  
C. 15  
D. 13  
E. 11  
●SOLUTION(s)●  
●traveled by train: 55 kph: 55x●  
●traveled by plane: 3 times at 300 kph: 300(3x)●  
●Total/sum: 2865●  
●55x + 300(3x) = 2865●  
●55x + 900x = 2865●  
●955x = 2865●  
●(955 and 2865 are both divisible by 955●  
●955x/955 = 2865/955●  
●x = 3 hrs● (time traveled by train)  
●3x = 3(3) = 9 hrs● (time traveled by plane)  
●x + 3x = 3+3(3) = 3+9= 12●  
●12 hrs●

92. 3/5 of the 75 students in the class are boys. How many girls are in the class?  
A. 25  
B. 45  
C. 40  
D. 30√  
E. 35  
●SOLUTION(s)●  
●(3/5)(75/1) = 225/5 = 45 boys●  
●(Total number) less (number of boys) = number of girls  
●75-45 = 30 girls●  
●30 girls●

93. Separate 90 into two parts such that the one exceeds the other by 36. What are the numbers?  
A. 27 & 63√  
B. 33 & 57  
C. 37 & 53   
D. 43 & 47  
E. 23 & 67  
●SOLUTION(s)●  
●larger number: 90-x●  
●smaller number: x●  
●total/sum: 36●  
●(90-x)-x = 36●  
●90-2x = 36●  
●-2x = 36-90●  
●-2x = -54●  
●(-2 and -54 are both divisible by -2)●  
●-2x/-2 = -54/-2●  
●x = 27  
●90-27 = 63●  
●27 & 63●

94. 1 is to 1/5 as 5/24 is to \_\_\_\_  
A. 1/22  
B. 1/20  
C. 1/24√   
D. 1/23  
E. 1/21  
●SOLUTION(s)●  
●(1) X (x) = (1/5)X(5/24)●  
●x = 5/120 (both are divisible by 5) = 1/24●  
●1/24●

95. The sum of three consecutive even integers is 282. What are the integers?  
A. 94, 96, 98  
B. 92, 94, 96√  
C. 88, 90, 92  
D. 90, 92, 94  
E. 96, 98, 100  
●SOLUTION(s)●  
●282 ÷ 3 =94●  
●94+2 = 96●  
●94-2 = 92●  
●92+94+96 = 282●  
●92, 94, 96●

96. Find the area of a trapezoid whose parallel sides measure 5.5 cm and 7.5 cm and whose altitude is 3.5 cm.  
A. 22.45 cm^2  
B. 22.55 cm^2  
C. 22.65 cm^2  
D. 22.75 cm^2√  
E. 22.85 cm^2  
●SOLUTION(s)●  
●parallel sides or base: a & b = 5.5 cm & 7.5 cm●  
●altitude or height: 3.5 cm●  
●FORMULA●  
●(AREA OF A TRAPEZOID)●  
●A = 1/2 h (a+b)●  
●A = 1/2 (3.5 cm)(5.5 cm + 7.5 cm)●  
●A = 1/2 (3.5 cm)(13 cm)●  
●A = 1/2 (45.5 cm)●  
●A = 1/2 (45.5/1)●  
●A = 45.5/2●  
●A = 22.75 cm^2●

97. Find the perimeter of a square whose sides measure 9.76 cm.  
A. 39.04 cm√   
B. 39.14 cm  
C. 39.24 cm  
D. 39.34 cm  
E. 39.44 cm  
●SOLUTION(s)  
●P = s X 4●  
●P = 9.76 cm X 4●  
●P = 39.04 cm●

98. 5, 7, 17, 63, \_\_  
A. 299   
B. 309√  
C. 319  
D. 329  
E. 339  
●SOLUTION(s)●  
●Multiplied by/times (1, 2, 3, 4, 5)●  
●Less/minus (2, 3, 4, 5, 6)●  
●7X1-2 = 5●  
●5X2-3 = 7●  
●7X3-4 = 17●  
●17X4-5 = 63●  
●63X5-6 = 309●

99. A cylindrical milk can has a radius of 4.5 cm and height of 8 cm. How much milk does it contain?  
A. 508.68 cm^3√  
B. 518.68 cm^3  
C. 528.68 cm^3  
D. 538.68 cm^3  
E. 548.68 cm^3  
●SOLUTION(s)●  
●π = 3.14●  
●V = πr^2h●  
●V = (3.14)(4.5)^2(8)●  
●V = (3.14)(4.5)(4.5)(8)●  
●V = (3.14)(20.25)(8)●  
●V = (3.14)(162)●  
●V = 508.68 cm^3●

100. Find the surface area of a rectangular prism with length 4.5 cm, width 5.5 cm, height 6.5 cm.  
A. 177.48 cm^2  
B. 178.48 cm^2  
C. 179.48 cm^2√   
D. 180.48 cm^2  
E. 181.48 cm^2  
●SOLUTION(s)●  
●length: 4.5 cm●  
●width: 5.5 cm●  
●height: 6.5 cm●  
●FORMULA●  
●(SURFACE AREA OF A RECTANGULAR PRISM)●  
●SA = 2Lw + 2Lh + 2wh●  
●SA = 2(4.5)(5.5) + 2(4.5)(6.5) + 2(5.5)(6.5)●  
●SA = 2(24.74) + 2(29.25) + 2(35.75)●  
●SA = 49.48+58.5+71.5●  
●SA = 179.48 cm^2●

PART 3: GENERAL INFORMATION  
101. December 21, 2016 was the longest night of the year. The scenario is called \_\_\_\_\_ solstice.  
A. spring  
B. winter√  
C. fall  
D. summer  
E. autumn

102. It is the present anti-graft that shall continue to function and exercise its jurisdiction as now or hereafter may be provided by law.  
A. Ombusman  
B. Senators  
C. Sandiganbayan√   
D. Tanodbayan  
E. Congressmen/Congresswoman  
●(Article XI)(Accountability of Public Officers)(Section 4)●

103. Choose the incorrect sentence.  
A. Civilian authority is, at all times, supreme over the military.  
B. The separation of Church and State shall be violable.√  
C. The prime duty of the Government is to serve and protect the people.  
D. The State shall promote social justice in all phases of national development.  
E. The State values the dignity of every human person and guarantees full respect for human rights.  
●(Article II)(Declaration of Principles and State Policies)(B. it should be 'inviolable'---Section 6)(A. Section 3)(C. Section 4)(D. Section 10)(E. Section 11)●

104. \_\_\_\_\_\_ shall have a just share, as determined by law, in the national taxes which shall be automatically released to them.  
A. Local government units√   
B. National government  
C. Municipal government  
D. City government  
E. Government of the Philippines  
●(Article X)(Local Government)(Section 6)●

105. The \_\_\_\_\_ shall give the highest priority to the enactment of measures that protect and enhance the right of all the people to human dignity, reduce social, economic, and political inequalities, and remove cultural inequities by equitably diffusing wealth and political power for the common good.  
A. Senate  
B. Office of the President  
C. Office of the Ombudsman  
D. Congress√  
E. Sandiganbayan  
●(Article XIII)(Social Justice and Human Rights)(Section 1)●

106. It is the national language of the Philippines.  
A. Filipino√   
B. Ilokano  
C. Pilipino  
D. Bisaya  
E. Tagalog  
●(Article XIV)(Education, Science and Technology, Arts, Culture and Sports)(Section 6)●

107. The \_\_\_\_\_\_ shall, as soon as possible, determine, by law, the specific limits of forest lands and national parks, marking clearly their boundaries on the ground.  
A. Office of the Ombudsman  
B. Senate  
C. Sandiganbayan  
D. Congress√  
E. Office of the President  
●(Article XII)(National Economy and Patrimony)(Section 4)●

108. The incumbent President shall continue to exercise \_\_\_\_\_\_\_ powers until the first Congress is convened.  
A. executive  
B. special  
C. legislative√   
D. united  
E. judicial  
●(Article XVIII)(Transitory Provisions)(Section 6)●

109. The \_\_\_\_\_\_ shall provide a system for securing the secrecy and sanctity of the ballot as well as a system for absentee voting by qualified Filipinos abroad.  
A. Commission on Elections  
B. Congress√  
C. Senate  
D. President  
E. Ombudsman  
●(Article 5)(Suffrage)(Section 2)●

110. Choose the incorrect sentence.  
A. Marriage, as an violable social institution, is the foundation of the family and shall be protected by the State.√   
B. The State recognizes the Filipino family as the foundation of the nation.  
C. The state shall defend: The right of spouses to found a family in accordance with their religious convictions and the demands of responsible parenthood.  
D. The right of families or family associations to participate in the planning and implementation of policies and programs that affect them.  
E. The family has the duty to care for its elderly members but the State may also do so through just programs of social security.  
●(Article XV)(The Family)(A. it should be "inviolable". ---Section 1)(B. Section 2)(C. Section 3 number 1)(D. Section 3)(E. Section 4)●

WORD PROBLEMS INVOLVING MEAN, MEDIAN, MODE & RANGE

MEAN  
It refers to the average of the values of the given set of numbers.  
Sa pag-so-solve ng mean, kailangan natin i-add lahat ng values ng numbers tapos i-di-divide natin sa dami ng given numbers. Ex. 1, 2, 3, 4, 5 = 1+2+3+4+5 = (5 lang po lahat ng numbers) = 15÷5 = 3 √

Sa pag-so-solve ng mean, kailangan natin i-multiply yung average sa dami ng given numbers. Ex. 90 X 6 = 540 tapos i-le-less po natin depende sa kung ano pa yung tinatanong.

1) Find the Arithmetic Mean of the ff. numbers: 10, 25, 35, 60, 95, 155  
SOLUTION:  
Arithmetic Mean = (Sum of the items) ÷ (Number of times)  
Arithmetic Mean = (10+25+35+60+95+155) ÷ 6 = 380÷6 = 63.33 √

2) Find the Arithmetic Mean of the ff. numbers: 8, -2, 9, 13, 17, 12  
SOLUTION:  
Arithmetic Mean = (Sum of the items) ÷ (Number of items)  
Arithmetic Mean = (8+(-2)+9+6+13+17+12) ÷ 7 = (8+9+6+13+17+12)+(-2) ÷ 7 = (65)+(-2) ÷ 7 = 65-2 ÷ 7 = 63÷7 = 9 √

3) The average of 6 numbers is 36. If the average of 4 numbers is 32, what is the average of 2 numbers?  
SOLUTION:  
Ave. of 6 nos. = 36 = 6 X 36 = 216  
Ave. of 4 nos. = 32 = 4 X 32 = 128  
Ave. of 2 nos. = (Ave. of 6 nos. less Ave. of 4 nos.)  
Ave. of 2 nos. = 216 - 128 = 88 ÷ 2 = 44 √

4) The average of 6 numbers is 36. If the average of 3 numbers is 36, what is the average of the remaining 3 numbers?  
SOLUTION:  
Ave. of 6 nos. = 36 = 6 X 36 = 216  
Ave. of 3 nos. = 36 = 3 X 36 = 108  
Ave. of 3 nos. = (Ave. of 6 nos. less Ave. of 3 nos.)  
Ave. of 3 nos. = 216 - 108 = 108 ÷ 3 = 36 √

5) The mean of 11 items is 17.5. If an observation 15 is deleted, find the mean of the remaining data.  
SOLUTION:  
Arithmetic Mean = (Sum of the items) ÷ (Number of items)  
17.5 = Sum of the items ÷ 11  
Sum of the items = 17.5 X 11 = 192.5  
(If one item 15 is deleted from 11 items, then the total number of items = 10)  
Sum of the items = 192.5 - 15 = 177.5  
Arithmetic Mean = 177.5÷10 =17.75 √

6) What must have been the average score of Kim in her first three tests so that her average score in the four tests was 86 when she scored 95 in her fourth test?  
SOLUTION:  
Ave. score in 4 tests = 86  
Score in her 4th test = 95  
Ave. score in her first 3 tests = ?  
(4 X 86) - 95 = 344-95 = 249÷3 = 83 √

7) Kate scored 97, 93, 92 in her first three tests. What must she get in her fourth test so that her average score in the four tests will be 95?  
SOLUTION:  
Scores in the first 3 tests = 97, 93, 92 = (97+93+92) = 282  
Average score in the 4 tests = 95  
Score in her 4th test  
(4 X 95) - 282 = 380-282 = 98 √

MEDIAN  
It refers to the middle number/value in a given set of numbers.  
Sa pag-so-solve ng median, kailangan po natin i-arrange yung mga numbers simula sa pinakamababang value hanggang sa pinakamataas na value at kukunin po natin yung middle number sa given set of numbers. Ex. 2, 6, 4, 10, 8 = 2, 4, 6, 8, 10 = 6 √

Sa pag-so-solve ng median, kapag dalawang number po yung nasa "middle", kailangan po natin sila i-add at i-divide sa 2 at yun po yung nasa "middle" ng given set of numbers. Ex. 12, 6, 2, 4, 10, 8 = 2, 4, 6, 8, 10, 12 = 6+8 = 14÷2 = 7 √

8) Find the median of the ff. observations: 17, 31, 12, 27, 15, 19, 23.  
SOLUTION:  
12, 15, 17, 19, 23, 27, 31 = 19 √

9) Find the median of the ff. observations: 23, 37, 65, 89, 6, 29, 44, 67  
SOLUTION:  
6, 23, 29, 37, 44, 65, 67, 89 = 37+44 = 81÷2 = 40.5 √

10) Find the median of the ff. numbers: 1.23, -1,23, 0.123, -123  
SOLUTION:  
-123, -1.23, 0.123, 1.23 = (-1.23)+(0.123) = -1.107 ÷ 2 = -0.5535

MODE  
It refers to the number(s)/value most frequently appeared in a given set of numbers. (Number(s)/po na pinakamaraming beses po na nag-appear). I-a-arrange rin po natin yung mga numbers simula sa pinakamababang value hanggang sa pinakamataas na value para makuha o mas madaling makuha yung mode. Ex. 1, 5, 9, 3, 7, 9 = 1, 3, 5, 7, 9, 9 =9 √

Kapag walang number po na mas maraming beses na nag-appear, ibig sabihin po walang Mode. Ex. 1, 5, 7, 3, 9 = 1, 3, 5, 7, 9 = No Mode √

Kapag 2 po yung pinakamaraming beses na nag-appear, ibig sabihin po 2 yung mode. Ex. 1, 5, 1, 3, 5, 7 = 1, 1, 3, 5, 5, 7 = 1 & 5 √

Kapag 3 po yung pinakamaraming beses na nag-appear, ibig sabihin po 3 yung mode. Ex. 3, 7, 1, 7, 3, 1, 5, 9 = 1, 1, 3, 3, 5, 7, 7, 9 = 1, 3, & 7 √

11) Find the mode of the ff. observations: 17, 6, 19, 14, 8, 6, 13, 25, 6, 16.  
SOLUTION:  
6, 6, 6, 8, 13, 14, 16, 17, 19, 25 = 6 √

12) Find the mode of the ff. observations: 28, 14, 42, 27, 25, 31, 28, 31, 45.  
SOLUTION:  
14, 25, 27, 28, 28, 31, 31, 42, 45 = 28 & 31 √

13) Find the mode of the ff. observations: 33, 23, 13, 43, 3, 53.  
SOLUTION:  
3, 13, 23, 33, 43, 53 = No Mode √

RANGE  
In a data, it refers to the difference between the maximum score & the minimum score. Ex. 7, 3, 5, 6, 4 = 7-3 = 4 √

14) Find the range of the items: 13, 18, 16, 14, 19, 17.  
SOLUTION:  
19-13 = 6 √

15) Find the range of the items: 4, 6, 8, 10, 12, 5, 3, 7, 9, 11.  
SOLUTION:  
12-3 = 9 √

OTE:  
THIS IS ONLY A REPOST

ANSWER KEY FOR THE 4TH 50-ITEM QUIZ WITH EXPLANATIONS AND SOLUTIONS◆

PART 1: ENGLISH  
1. There is \_\_\_\_ sugar in my cup of coffee.  
A. any B. many  
C. a few D. a lot of√  
●(We use 'A LOT' to talk about a large amount or number. The exact amount or number is not important. We can use 'a lot of' in positive and negative sentences and questions.)  
('A LOT OF' is used before uncountable and countable nouns in positive sentences. Ex. a. There is a lot of good furniture in this mall.)

2. It's late but Joe hasn't come yet. I think \_\_\_\_\_ has happened.  
A. something√ B. someone  
C. some D. anything  
●(We use the pronoun 'SOMETHING' to refer to things in affirmative sentences. 'SOMEONE' is used to refer to people.)●

3. They live a boring life. They never go \_\_\_\_\_.  
A. where B. anywhere√  
C. everywhere D. somewhere  
●(We use 'ANYWHERE' in negative clauses/statements/sentences. 'NEVER' refers to negative meaning.)●

4. \_\_\_\_ men, \_\_\_\_ minds (idiom).  
A. Any/any B. Much/much  
C. Many/many√ D. A little/a little  
●(We say 'Many men, many minds'.)●

5. Would you like an apple or a pineapple? -It doesn't matter, \_\_\_\_ is good for me.  
A. either√ B. every  
C. anyone D. anything  
●('EITHER' is used to express a similarity with a statement made. Here: you can give an apple or a pineapple because I like them both.)●

6. Formal writing: \_\_\_\_ water is wasted.  
A. Many B. Lots of  
C. Plenty of√ D. A lot of  
●(In formal writing, we use 'much' or 'plenty of')●

7. We left a glass of water on the windowsill for some days. Now \_\_\_\_ of water has evaporated.  
A. most√ B. many  
C. several D. none  
●('MOST' is used with uncountable nouns. We use 'MANY', 'SEVERAL', and 'NONE' with countable nouns.)

8. We don't have \_\_\_\_ time for it.  
A. many B. much√  
C. few D. a few  
●(We use 'MUCH' to talk about a large amount or number. The exact amount or number is not important. We usually use 'MUCH' in negative sentences and questions. In everyday English, we don't use 'MUCH' in positive sentences. 'MUCH' can be used in positive sentences only in a formal context: Much work remains to be done. And also with adverbs 'too' and 'so' - 'too much', 'so much': a. I'd love to come, but I've got too much work to do. b. We were having so much fun.)  
('MUCH' is used before uncountable nouns. Ex. How much paper do we use in the office daily?)

9. I had \_\_\_\_ rice for lunch.  
A. any B. a few  
C. some√ D. many  
●(We use 'SOME' in positive sentences/statements. Ex. a. He's got some books from the library. b. I will have some news next week. c. She has some valuable books in her house. d. Philip wants some help with his exams. e. There is some butter in the fridge. f. We need some cheese if we want to make a fondue.)  
('SOME' is used with countable and uncountable nouns, to describe an indefinite or incomplete quantity.)  
('SOME' is also used in questions where we are sure about the answers. Ex. a. Did he give you some tea? b. Is there some fruit juice in the fridge?)  
('SOME' is used in situations where the question is not request for information, but a method of making a request, encouraging or giving an invitation. Ex. a. Could I have some books, please? b. Why don't you take some books home with you? c. Would you like some books?)  
('SOME' is used in questions. Ex. a. Would you like some help? b. Will you have some more roast beef?)●

10. It's too dark, I can't see \_\_\_\_\_\_.  
A. some B. something  
C. any D. anything√  
●(We use the pronoun 'ANYTHING' to refer to things in negative sentences, 'without' refers to the negative meaning and 'NEVER', 'HARDLY', 'WITHOUT' in positive sentences.)

11. It was the worst birthday ever. \_\_\_\_ friends visited me.  
A. Few√ B. A few  
C. Some D. Any  
●(We use 'FEW' before countable nouns)●

12. Sam could see \_\_\_ because of the rain. The road was becoming more and more dangerous.  
A. a few B. much  
C. many D. little√  
●(We use 'LITTLE' with verbs which are not followed by a noun)●

13. You have \_\_\_\_\_ money.  
A. less B. enough√  
C. more D. much  
●('ENOUGH' is used to indicate the necessary amount or quantity. It is place before nouns.)●

14. You can borrow \_\_\_ of my books.  
A. some B. a little  
C. any√ D. a few  
●('ANY' can also be used in positive statements to mean 'no matter which'.)●

15. I left my glasses \_\_\_\_\_ in the house.  
A. somewhere√ B. nowhere  
C. anywhere D. everywhere  
●('SOMEWHERE' is used with positive statements)●

16. I have \_\_\_\_\_ money left after shopping.  
A. a few B. a little√  
C. few D. many  
●(We use 'A LITTLE' before/with uncountable nouns and also means 'some'. Ex. There is a little cheese in the fridge.)

17. He has the \_\_\_\_ friends.  
A. much B. least  
C. more D. fewest√  
●(FEWEST' is used only with countable plural nouns)●

18. There are \_\_\_\_ bananas left. This is not enough for us.  
A. a little B. a few√  
C. any D. many  
●('A FEW' is used before plural countable nouns. Ex. 'Enough friends visited me'.)  
('A FEW' means 'SOME'.)

19. He has the \_\_\_\_ time.  
A. fewest B. most  
C. least√ D. much  
●('LEAST' is used only with uncountable nouns.)

20. They can choose \_\_\_\_\_\_ from the menu.  
A. anything√ B. something  
C. nothing D. everything  
●('ANYTHING' can also be used in positive statements to mean 'no matter what'.)●

21. I don't think we've got \_\_\_\_\_ coffee left.  
A. some B. a few  
C. any√ D. many  
●(We use 'ANY' in questions and with 'not' in negative sentences. Ex. a. Have you got any tea? b. He didn't give me any tea. c. Dear, have you bought any apples? d. There was hardly any policeman on the road. \*'Hardly' refers to the negative meaning\*.)  
('ANY' is used with countable and uncountable nouns, to describe an indefinite or incomplete quantity.)  
(We use 'ANY' in negative sentences and 'NEVER', 'HARDLY', WITHOUT' in positive sentences. Ex. a. She doesn't want any kitchen appliances for Christmas. b. They don't want any help moving to their new house. c. No, thank you. I don't want any more cake. d. There isn't any reason to complain.)  
(We use 'ANY' in interrogative sentences. Ex. a. Do you have any friends in London? b. Have they got any children? c. Do you want any groceries from the shop? d. Are there any problems with your work?)●

22. I have the \_\_\_\_ apples.  
A. much B. most√  
C. least D. many  
●('MOST' is used with countable and uncountable nouns.)●

23. She had \_\_\_\_ time to study than Jake but had better results.  
A. least B. little  
C. less√ D. the least  
●('LESS' is used with than. The order is little(positive degree)- less(comparative degree)-\*the\* least(superlative degree)●

24. You may invite \_\_\_\_\_ to dinner, I don't mind.  
A. anybody√ B. somebody  
C. nobody D. everybody  
●('ANYBODY' can also be used in positive statements to mean 'no matter who'.)●

25. There are \_\_\_\_\_ students in the class. (formal written English)  
A. a lot of B. a little  
C. much D. many√  
●{In everyday English (natural English) English people do not use 'much' and 'many' in positive sentences, they prefer 'A LOT OF'. Ex. a. There are a lot of tourists here in the summer. They usually use 'much' and 'many' in negative sentences and questions: Are there many students here from Japan? In spoken English and informal writing we tend to use: 'A LOT', 'A LOT OF', 'LOTS OF' with countable and uncountable nouns. Ex. How many students are there in the classroom? - There are 'a lot'. In formal written English, it is also possible (and preferable) to use 'many' and 'much' rather than 'a lot of', 'lots of' and 'a lot' Ex. There are many students)  
(We use 'MANY' to talk about a large amount or number. The exact amount or number is not important. We usuall use 'MANY' in negative sentences and questions. In everyday English, we don't 'MANY' in positive sentences. 'MANY' can be used in positive sentences only in a formal context: Many people feel that the law should be changed. And also with adverbs 'too' and 'so' - 'too many', 'so many'. a. There are too many mistakes in this essay. b. I've got so many things to do this morning.)  
('MANY' is used with plural countable nouns.)  
(We use 'MANY' before countable nouns. Ex. a. He eats many sweets everyday.

●NOTES●  
●10 COMPARATIVE OR GRADED QUANTIFIERS●  
●much, many, more, most, few, fewer, fewest, little, less, and least●  
●Much, many, more and most describe (in ascending order) increase; much is used only with uncountable nouns, many only with plural countable nouns, and more and most with both.●  
I have much time. < I have more time. < I have the most time.  
I have many apples. < I have more apples. < I have the most apples.  
●Few, fewer, fewest, little, less, and least chart decrease. The first three (in descending order) are used only with countable plural nouns. The last three (in descending order) are used only with uncountable nouns.)●  
He has few friends. > He has fewer friends. > He has the fewest friends.  
He has little time. > He has less time. > He has the least time.  
●GRADED QUANTIFIERS● They function like comparatives and hold a relative position on a scale of 'INCREASE' or 'DECREASE'.  
●Examples●  
●many, more, most●  
a. There are MANY people in English, MORE in India, but THE MOST people live in China.  
●few, fewer, fewest●  
b. FEW fivers in Europe are not polluted. FEWER people die young now than in the seventeenth century. The country with THE FEWEST people per square kilometer must be Australia.  
●little, less, least●  
c. Scientists have LITTLE hope of finding a complete cure for cancer before the year 2,000. She had LESS time to study than Jake but had better results. Give the dog the LEAST opportunity and it will bite you.  
●QUANTIFIERS THAT EXPRESS ATTITUDE●  
The words few, little and the phrases - a few and a little serve to describe the speaker's attitude to the quantity being described. The first two carry negative suggestions, whereas the last two carry positive suggestions.  
●'ENOUGH'●  
'ENOUGH' is used to indicate the necessary amount or quantity; it is placed before nouns. Ex. There is enough time, You have enough money, Is there enough food?.)  
●QUANTIFIERS WITH COUNTABLE AND UNCOUNTABLE NOUNS●  
Adjectives and adjectival phrases that describw quantity are shown below. Some can only go with countable nouns (friends, cups, people), and some can only go with uncountable nouns (sugar, tea, money, advice). Some words can be used with both countable and uncountable nouns.  
●Only with uncountable nouns●  
a. How much?  
b. a little  
c. a bit (of)  
d. ---  
e. a great deal of  
f. a large amount of  
g. ---  
\*+ noun\*  
●With uncountable and countable nouns●  
a. How much? or How many?  
b. no/none  
c. not any  
d. some (any)  
e. a lot of  
f. plenty of  
g. lots of  
●Only with countable nouns●  
a. How many?  
b. a few  
c. a number (of)  
d. several  
e. a large number of  
f. a great number of  
g. ---  
\*\*NOTE: 'much' and 'many' are used in negative and question forms.  
●Examples●  
a. HOW MUCH money have you got?  
b. HOW MANY cigarettes have you smoked?  
c. There's NOT MUCH sugar in the cupboard.  
d. There wereN'T MANY people at the concert.  
●In positive statements, we use A LOT OF●  
Examples:  
a. I've got A LOT OF of work this week.  
b. There were A LOT OF people at the concert.  
●THE QUANTIFIERS--A FEW AND FEW, A LITTLE AND LITTLE●  
These expressions show the speaker's ATTITUDE towards the quantity he/she is referring to.  
●A FEW● (for countable nouns) and ●A LITTLE● (for uncountable nouns. 'A little' means 'some, but not much') describe the quantity in a POSITIVE way:  
Examples:  
a. "I've got A FEW friends" (maybe not many, but enough)  
b. I have A FEW friends. (Practically it means a small number of friends.)  
c. "Ive got A LITTLE money (I've got enough to live on)  
d. There is A LITTLE water in the jug. (Practically it means some water)  
●FEW and ●LITTLE● ●FEW● describe the quantity in a NEGATIVE way.  
●LITTLE● means 'hardly any' and it has NEGATIVE meaning.  
Examples:  
a. FEW people visited him in hospital (he had almost no visitors)  
b. I have FEW friends. (Practically it means no friends.)  
c. He had LITTLE money (almost no money)  
d. There is LITTLE water in the jug. (Practically it means no water.)  
●THE QUANTIFIERS--COMPOUND NOUNS MADE WITH SOME, ANY & NO●  
●Some+ -thing, -body, -one, -where●  
●Any+ -thing, - body, -one, -where●  
●No+ -thing, -body, -one, -where  
Compound nouns with 'some-' and 'any-' are used in the same way as 'some' and 'any'.  
●POSITIVE STATEMENTS●  
Examples:  
a. SOMEONE is sleeping in my bed.  
b. He saw SOMETHING in the garden.  
c. I left my glasses SOMEWHERE in the house.  
●QUESTIONS●  
Examples:  
a. Are you looking for SOMEONE? (I'm sure you are)  
b. Have you lost SOMETHING? (I'm sure you have)  
c. Is there ANYTHING to eat? (real question)  
d. Did you go ANYWHERE last night?  
●NEGATIVE STATEMENTS●  
Examples:  
a. She didn't go ANYWHERE last night.  
b. He doesn't know ANYBODY here.  
●NOTICE● that there is a difference in emphasis between 'nothing' 'nobody', etc. and 'not ... anything', 'not ... anybody'.  
Examples:  
a. I doN'T know anything about it. (neutral, no emphasis)  
b. I know NOTHING about it (more emphatic, maybe defensive)  
●SOMETHING, SOMEBODY, SOMEWHERE●  
Examples:  
a. I have SOMETHING to tell you.  
b. There is SOMETHING to drink in the fridge.  
c. He knows SOMEBODY in New York.  
d. Sam has SOMEBODY staying with her.  
e. They want to go SOMEWHERE hot for their holidays.  
f. Kim is looking for SOMEWHERE to live.  
●ANYBODY, ANYTHING, ANYWHERE●  
Examples:  
a. Is there ANYBODY who speaks English here?  
b. Does ANYBODY have the time?  
c. Is there ANYTHING to eat?  
d. Have you anything to say?  
e. He doesn't have ANYTHING to stay tonight.  
f. I wouldn't eat ANYTHING except at Maxim's.  
●NOBODY, NOTHING, NOWHERE●  
a. There is NOBODY in the house at the moment.  
b. When I arrived there was NOBODY to meet me.  
c. I have learnt NOTHING since I began the course.  
d. There is NOTHING to eat.  
e. There is NOWHERE as beautiful as Paris in the Spring.  
f. Homeless people have NOWHERE to go at night.  
●ANY● can also used in positive statements to mean 'no matter which', 'no matter who', 'no matter what' :  
Examples:  
a. You can borrow ANY of my books.  
b. They can choose ANYTHING from the menu.  
c. You may invite ANYBODY to dinner, I don't mind.  
●USE OF AS SOON AS & NO SOONER.. THAN●  
'AS SOON AS' has positive meaning. A sentence using 'AS SOON AS' can be changed with 'NO SOONER ... THAN'  
Examples:  
●using AS SOON AS●  
a. AS SOON AS the teacher entered the class, all the students stood up.  
●using NO SOONER ... THAN●  
b. NO SOONER did the teacher enter the class THAN all the students stood up.  
●using AS SOON AS●  
a. AS SOON AS they visit him, he welcomes them.  
●using NO SOONER ... THAN●  
b. NO SOONER do they visit him THAN he welcomes them.

PART 2: MATHEMATICS  
26. Find the area of a trapezoid whose parallel sides measure 4 cm and 6 cm, and whose altitude is 1.5 cm.  
A. 5.5 cm^2 B. 6.5 cm^2  
C. 7.5 cm^2√ D. 8.5 cm^2  
●SOLUTION(s)●  
●Trapezoid is a polygon with four (4) sides●  
●parallel sides or base: a & b = 4 cm & 6 cm●  
●altitude or height (h) = 1.5 cm●  
●FORMULA●  
●(AREA OF A TRAPEZOID)●  
●A = 1/2 h (a+b)●  
●A = 1/2 (1.5) (4+6)●  
●A = 1/2 (1.5) (10)●  
●A = 1/2 (15)●  
●A = 1/2 (15/1)●  
●A = 15/2●  
●A = 7.5 cm^2●

27. Find the area of a triangle whose length is 10 cm and whose height is 25 cm.  
A. 125 cm^2√ B. 115 cm^2  
C. 105 cm^2 D. None of these  
●SOLUTION(s)●  
●A triangle is a polygon with three (3) sides●  
●FORMULA●  
●(AREA OF A TRIANGLE)●  
●length = L = 10 cm●  
●height = h = 25 cm●  
●A = 1/2L X h●  
●A= 1/2(10) X (25)●  
●A = 1/2(10/1) X (25)●  
●A = 5 X 25●  
●A = 125 cm^2●

28. Find the perimeter of a square whose sides measure 7 cm each.  
A. 21 cm B. 28 cm√  
C. 14 cm D. None of these  
●SOLUTION(s)●  
●Square is a polygon with four (4) sides●  
●FORMULA●  
●(PERIMETER OF A SQUARE)●  
●P = s X 4●  
●P = 7 cm X 4●  
●P = 28 cm●

29. The length of a rectangle is 5 meters (m) more than its width. If the perimeter is 70 m. What are its dimensions?  
A. 15 cm and 20 cm√ B. 20 cm and 25 cm  
C. 25 cm and 30 cm D. 30 cm and 35 cm  
●SOLUTION(s)●  
●Rectangle is a polygon with four (4) sides●  
●L = 5+w (length of a rectangle is 5 m. more than its width)●  
●width: x●  
●length: x+5●  
perimeter = P: 70  
●FORMULA●  
●(PERIMETER OF A RECTANGLE)●  
●P = 2L+2w●  
●70 = 2(x+5)+2(x)●  
●(We must apply the distribution property of multiplication on the right side of the equation, a (b+c) = ab+ac)●  
●70 = 2x+10+2x●  
●70 = 4x●  
●70-10 = 4x●  
●60 = 4x●  
●(60 and 4 are both divisible by 4)●  
●60/4 = 4x/4●  
●15 = x●  
●x= 15 cm● (width)  
●x+5 = 15+5●  
●20 cm● (length)

30. Find the perimeter of a dodecagon whose sides measure 6 cm each.  
A. 48 cm B. 54 cm  
C. 60 cm D. None of these√  
●SOLUTION(s)●  
●Dodecagon is a polygon with twelve (12) sides●  
●(PERIMETER OF A DODECAGON)●  
●P = s X 12●  
●P = 6 cm X 12  
●P = 72 cm●

31. Find the perimeter of an equilateral triangle whose sides measure 37.5 cm each.  
A. 111.5 cm B. 112.5 cm√  
C. 113.5 cm D. None of these  
●SOLUTION(s)●  
●Equilateral triangle is a triangle with three (3) equal sides●  
●FORMULA●  
●(PERIMETER OF AN EQUILATERAL TRIANGLE)●  
●P = s1+s2+s3●  
●P = 37.5 cm + 37.5 cm + 37.5 cm●  
●P = 112.5 cm●

32. Find the area of a heptagon whose sides measure 8.3 cm each.  
A. 66.89 cm^2 B. 67.89 cm^2  
C. 68.89 cm^2√ D. None of these  
●SOLUTION(s)●  
●Heptagon is a polygon with seven (7) sides●  
●FORMULA●  
●A = s^2●  
●A = (8.3 cm)^2●  
A = (8.3 cm)(8.3 cm)  
●A = 68.89 cm^2●

33. Find the perimeter of a nonagon whose sides measure 6.5 cm each.  
A. 58.5 cm√ B. 52 cm  
C. 45.5 cm D. None of these  
●SOLUTION(s)●  
●Nonagon is a polygon with nine (9) sides●  
●FORMULA●  
●(PERIMETER OF A NONAGON)●  
●P = s X 9●  
●P = 6.5 cm X 9●  
●P = 58.5 cm●

34. Find the height of a trapezoid whose base lengths are 3 and 7 units and whose area is 15 sq. units.  
A. 2 units B. 3 units√  
C. 4 units D. 5 units  
●SOLUTION(s)●  
●Trapezoid is a polygon with four (4) sides●  
●parallel sides or base: a & b = 3 & 7●  
●Area = A = 15●  
●FORMULA●  
●(AREA OF A TRAPEZOID)●  
●A = 1/2 h (a+b)●  
●15 = 1/2 h (3+7)●  
●15 = 1/2 h (10)●  
●15 = 1/2 h (10/1)●  
●15 = 5h●  
●(15 and 5 are both divisible by 5)●  
●15/5 = 5h/5●  
●3 = h  
●h = 3 units●

35. Find the perimeter of an isosceles triangle whose sides are 36.5 cm, 39.5 cm, and 39.5 cm.  
A. 113.5 cm B. 114.5 cm  
C. 115.5 cm√ D. None of these  
●SOLUTION(s)●  
●Isosceles triangle is a triangle with two (2) equal sided●  
●(PERIMETER OF AN ISOSCELES TRIANGLE)●  
●P = 36.5 cm +39.5 cm + 39.5 cm●  
●P = 115.5 cm●

36. The circle has a radius of 3.5 meters. Find its area.  
A. 38.46 m^2√ B. 38.47 m^2  
C. 38.50 m^2 D. None of these  
●SOLUTION(s)●  
●Use π = 3.14●  
●radius = r = 3.5 m●  
●FORMULA●  
(AREA OF A CIRCLE)  
●A = πr^2●  
●A = (3.14)(3.5 m)^2●  
●A = (3.14)(3.5 m)(3.5 m)●  
●A = (3.14)(12.25 m^2)●  
●A = 38.465 m^2 (Must be round off up to two decimal places. "6" at the left & "5" at the right. "6" is an even number, that means it is still retained even if "5" is in the right side.●  
●A = 38.46 m^2●

37. Find the perimeter of a decagon whose sides measure 5.7 cm each.  
A. 45.6 cm B. 51.3 cm  
C. 57 cm√ D. None of these  
●SOLUTION(s)●  
●Decagon is a polygon with ten (10) sides●  
●FORMULA●  
●(PERIMETER OF A DECAGON)●  
●P = s X 10●  
●P = 5.7 cm X 10●  
●P = 57 cm●

38. Find the area of a parallelogram whose sides measure 7.7 cm each.  
A. 58.29 cm^2 B. 59.29 cm^2√  
C. 60.29 cm^2 D. None of these  
●SOLUTION(s)●  
●Parallelogram is a polygon with four (4) sides●  
●FORMULA●  
●(AREA OF A PARALLELOGRAM)●  
●A = S^2●  
●A = (7.7 cm)^2●  
A = (7.7 cm)(7.7 cm)  
●A= 59.29 cm^2●

39. Find the surface area of a rectangular prism whose length is 5 cm, width is 4 cm, and height is 6 cm.  
A. 118 cm^2 B. 128 cm^2  
C. 138 cm^2 D. None of these√  
●SOLUTION(s)●  
●length: 5 cm●  
●width: 4 cm●  
●height: 6 cm●  
●FORMULA●  
●(SURFACE AREA OF A RECTANGULAR PRISM)●  
●SA = 2Lw+2Lh+2wh●  
●SA =2(5 cm)(4 cm)+2(5 cm)(6 cm)+2(4 cm)(6 cm)●  
●SA = 40 cm^2+60 cm^2+48 cm^2●  
●SA = 148 cm^2●

40. Find the area of a square whose sides measure 5 cm each.  
A. 25 cm^2√ B. 15 cm^2  
C. 5 cm^2 D. none of these  
●SOLUTION(s)●  
●Square is a polygon with four (4) sides.  
●FORMULA●  
●(AREA OF A SQUARE)●  
●A = s^2●  
●A = (5 cm)^2●  
A = (5 cm)(5 cm)  
●A = 25 cm^2●

41. Find the area of a hexagon whose sides measure 6.7 cm each.  
A. 44.59 cm^2 B. 44.69 cm^2  
C. 44.79 cm^2 D. None of these√  
●SOLUTION(s)●  
●Hexagon is a polygon with six (6) sides●  
●FORMULA●  
●(AREA OF A HEXAGON)●  
●A = s^2●  
●A = (6.7 cm)^2●  
A = (6.7 cm)(6.7 cm)  
●A = 44.89 cm^2 ●

42. A milk can has a radius of 9 cm and a height of 30 cm. How much milk does it contain?  
A. 7,603.20 cm^3 B. 7,630.20 cm^3√  
C. 7,306.20 cm^3 D. 7360.20 cm^3  
●SOLUTION(s)●  
●Use π = 3.14●  
●radius = r = 9 cm●  
●height = h = 30 cm●  
●FORMULA●  
●VOLUME OF A CYLINDER)●  
●V = πr^2h●  
●V = (3.14)(9 cm)^2(30 cm)●  
●V = (3.14)(81 cm^2)(30 cm)●  
●V = (3.14)(2,430 cm^3)●  
●V = 7,630.20 cm^3●

43. A trapezoid has an area 75 sq. cm., height 15 cm, and base of 6 cm. Find the other base.  
A. 2 cm B. 3 cm  
C. 4 cm√ D. 5 cm  
●SOLUTION(s)●  
●Trapezoid is a polygon with four (4) sides●  
●Area = A = 75●  
●altitude or height (h) = 15●  
●parallel side or base = a = 6 cm●  
●parallel side or base = b = ?●  
●FORMULA●  
●(AREA OF A TRAPEZOID)●  
●A = 1/2 h (a+b)●  
●75 = (1/2) 15 (6+b)●  
●We have to eliminate the fraction(s), so, we must multiply "2" to both sides of the equation. Cancellation of "2" on the right side of the equation●  
●(2) 75= (2) (1/2) 15 (6+b)●  
●150 = (1) 15 (6+b)●  
●150 = 15 (6+b)●  
●We must apply the distribution property of multiplication on the right side of the equation, a (b+c) = ab+ ac●  
●150 = 15(6)+15(b)●  
●150 = 90+15b●  
●150-90 = 15b●  
●60 = 15b●  
●(60 and 15 are both divisible by 15●  
●60/15 = 15b/15●  
●4 = b●  
●b = 4 cm●

44. Find the perimeter of a scalene triangle whose sides measure 33.25 cm, 35.5 cm, and 37.75 cm.  
A. 105.5 cm B. 106.5 cm√  
C. 107.5 cm D. None of these  
●SOLUTION(s)●  
●Scalene triangle is a triangle with no (0) equal sides●  
●FORMULA●  
●(PERIMETER OF A SCALENE TRIANGLE)●  
●P = 33.25 cm +35.5 cm + 37.75 cm●  
●P = 106.5 cm●

45. Two rectangular boards, each measuring 7 cm X 5 cm, are placed together to make one large board. How much shorter will the perimeter be if the two long sides are placed together, if the other two shorter sided are placed together?  
A. 1 B. 2  
C. 3 D. None of these√  
●SOLUTION(s)●  
●Rectangle is a polygon with four (4) sides●  
●FORMULA●  
●(PERIMETER OF A RECTANGLE)●  
●P = 2L+2w●  
●P = 2(7)+4(5)●  
●P = 14+20●  
●P = 34 (1st rectangular board)●  
●P = 2L+2w●  
●P= 4(7)+2(5)●  
●P= 28+10●  
●P = 38 (2nd rectangular board)  
●Difference = (2nd rectangular board) minus (1st rectangular board)●  
●Difference = 38-34●  
●4●  
PART 3: GENERAL INFORMATION  
46. Those born before \_\_\_\_\_\_\_\_, of Filipino mothers, who elect Philippine Citizenship upon reaching the age of majority are citizens of the Philippines.  
A. January 17, 1971 B. January 17, 1972  
C. January 17, 1973√ D. January 17, 1974  
●(Citizenship)●  
●(Article IV, Section 1)●

47. The Supreme Court shall be composed of a Chief Justice and \_\_\_\_ Associate Justices.  
A. twelve B. thirteen  
C. fourteen√ D. fifteen  
E. sixteen  
●(Judicial Department)●  
●(Article VIII, Section 4)●

48. The Constitutional Commissions, which shall be independent, are:  
a. the Civil Service Commission  
b. the Commission on Elections  
c. the Commission on Audit  
A. a B. b  
C. c D. a & b  
E. a, b & c√  
●Constitutional Commissions (A Common Provisions)●  
●(Article IX, Section 1)●

49. The \_\_\_\_\_ of the Philippines shall exercise general supervision over local governments.  
A. Mayors B. Governors  
C. Senators D. DILG Secretary  
E. President√  
●(Local Government)●  
●(Article X, Section 4)●  
50. Stephanie Del Valle is from what specific country?  
A. Dominican Republic B. Indonesia  
C. Kenya D. Puerto Rico√  
E. Philippines  
●(Miss Puerto Rico Stephanie Del Valle crowned Miss World 2016)●

NOTE:  
THIS IS ONLY A REPOST

◆ANSWER KEY FOR THE SECOND (2ND) 50-ITEM QUIZ WITH EXPLANATIONS & SOLUTIONS◆  
PART 1: ENGLISH  
1. It was the best place THAT I've ever seen.  
●THAT● normally follows words like something, anything, everything, nothing, all & the superlatives●  
2. I was born on A Friday.  
●A● used with or before names of days●  
3. Joe HAD SPENT five years in Palawan before he became a teacher of Bulacan.  
●Past Perfect Tense   
●Form of the Verb (Subject + had + Verb(past participle) + Rest of the Sentence) (Used to express something that happens before another action in the past)●  
4. Anna HAS COOKED one hundred hotcakes today.  
●Present Perfect Tense●  
●Form of the Verb (Subject + has/have + Verb(past participle + Rest of the Sentence) (The action has been completed recently & we see the result of it in the present)●  
5. ALTHOUGH/WHILST/WHILE/WHEREAS Anna Conde showed a good performance in the intramurals, she surprising lost in the sport that she has joined.  
●ALTHOUGH, WHILST, WHILE, WHEREAS● are synonymous with each other● (When we want to show a conflict between the main clause & the statement in the subordinate clause)  
6. I AM GOING TO READ the story of Romeo & Juliet tomorrow.  
●Simple Future Tense (Subject + will + Verb + Rest of the Sentence) & (Subject + am/is/are going to + Verb + Rest of the Sentence) (Use when we plan or make a decision to do something. Nothing is said about the time in the future)●  
7. The phrasal verb "to nod off" means?  
●to nod off > to fall asleep accidentally  
●to wake up > to stop sleeping  
●to look down on > to look arrogantly & contemptously  
●to keep on > to continue in spite of difficulties  
8. You HAVE TO pass your exams or the university will not accept you.  
●HAVE TO●express certainty, neccessity, obligation & annoyance. Makes obligation necessary. Not our own idea to do something, when we are forced to do something by somebody or by circumstances●  
9. She drives the car very FAST.  
●FAST● Some irregular adverbs do not have the '-ly' form● (other ex. hard, high, long, low, near, late, early)●  
10. Which of the ff. phrases is correct?  
●ALL OF YOU, BOTH OF US, HALF OF THEM● (all given phrases are correct). It is quite common to add it in most situations except when there is no article●  
11. John HAD BEEN WAITING at the waiting shed for two hours.  
●Past Perfect Continuous Tense  
●Form of the Verb (Subject + had been + Verb +ing + Rest of the Sentence) (Emphasizes the duration of an action in the past before another one)●  
12. Animal rights groups have influenced on cosmetic companies greatly. CONSEQUENTLY/SO THAT/AS A RESULT/THEREFORE, many brands have stopped testing products on animals.  
●CONSEQUENTLY, SO THAT, AS A RESULT, THEREFORE● are synonymous with each other ('Consequently' is used to talk about results and consequences)●  
13. I've known Anna FOR three years.  
●FOR● used to indicate time or duration●  
14. King EXPLORES the nature of our emotion in his new book.  
●Simple Present Tense (Subject + Verb + Rest of the Sentence) (Talks about summaries & behaviour)  
15. Joe WILL HAVE BEEN WORKING for five years for this company in February.  
●Future Perfect Continuous Tense  
●Form of the Verb (Subject + will have been + Verb +ing + Rest of the Sentence) (Concentrated more on the duration of the action)●  
16. Several years ago, (-) Valenzuela City is part of Bulacan province.  
●No Article (-)● used before names of cities & suburbs●  
17. She wear glasses ON her eyes.  
●ON● used to indicate a part of the body.●  
18. It is an adverb which means extremely, totally, completely.  
●UTTERLY● ex. looks utterly ridiculous●  
19. MAY I drink water? Teacher: Yes, you MAY.  
●MAY●used to ask or give permission formally●  
20. CAN I use your umbrella? You CAN use my umbrella.  
●CAN●use to ask or give permission informally●  
21. DO we KILL?  
●{auxiliary(do) + subject(I/you/we/they) + verb(present tense)}●  
22. DOES Joe KILL?  
●{auxiliary(does) + subject(name of a person) + verb(present tense)}●  
23. DID he KILL?  
●{auxiliary(did) + subject(it/he/she) + verb(present tense)}●  
24. The right sequence of the ff. adjectives:  
able-abler-ablest  
●We add 'r' in comparative form & 'st' in superlative form for the adjectives ending in 'e'●  
25. We've bought a car for OURSELVES.  
●OURSELVES● is the right reflexive form of the personal pronoun 'We'.●

PART 2: MATHEMATICS  
26. The sum of three consecutive odd numbers is 75. What are the three numbers?  
●SOLUTION(s)●  
●Odd numbers are numbers ending in 1,3,5,7,9●  
●Even numbers are numbers ending in 0,2,4,6,8●  
Given:  
Sum: 75  
Divided into: 3  
Numbers: ?  
●75÷3 = 25, (25-2 =23)(25+2= 27)●  
●Therefore, 23, 25, 27 are the three numbers●  
●23, 25, 27●  
27. Round off to the nearest thousandths:  
1357.2468  
●SOLUTION(s)●  
●"6" is the thousandths place. We must look at the number on the right side of "6", which is "8"●  
●If the number to be rounded off at the left side is 0-4, we must retain that number●  
●If the number to be rounded off at the left side is 5-9, we must add 1 on that number●  
●Excemptions●  
●If the number to be rounded off at the left side is an even number (0,2,4,6,8) & the number at the right side is 5, we must retain that number.●  
●If the number to be rounded off at the left side is an odd number (1,3,5,7,9) & the number at the right side is 5, we must add 1 at that number.●  
●1357.247●  
28. Scientific Notation: Round off up to one decimal place or two significant figures.  
246810  
●SOLUTION(s)●  
●move the decimal point to the left. (Whole numbers or numbers with no decimal point is understood that their decimal point is ALWAYS at the RIGHT side)●  
●Scientific Notation is termed power of ten with the formula "m x 10 to the nth power (m x 10 ^nth), ex. is 10 x 10 ^ 2●  
●2.5 X 10 ^5●  
29. Find the mean of the ff. numbers:  
1234, 3214, 1324, 1423, 1342, 1324  
●SOLUTION(s)●  
●"Mean" means the average. We must add the given set of numbers & divide it to the number (how many are they) of the given numbers●  
●1234+3214+1324+1423+1342+1324 ÷ 6 = 1643.5●  
●1643.5●  
30. Round off to the nearest tens:  
1357.2468  
●SOLUTION(s)●  
●"5" is the tens place. We must look at the number on the right side of "5", which is "7"●  
●See the explanations in Question #27, starting 2nd explanation●  
●1360●  
31. Scientific Notation: Round off up to two decimal places or three significant figures.  
246810  
●SOLUTION(s)●  
●See the explanations in Question #28●  
●2.47 X 10 ^ 5●  
32. 1, 4, 10, 22, 46, \_\_\_\_  
●SOLUTION(s)●  
●1, (+3) 4, (+6) 10, (+12) 22, (+24) 46, (+48) 94●  
●3 (x2) 6(x2) 12 (x2) 24 (x2) 48● (all are been multiplied twice)●  
●94●  
33. Find the median of the ff. numbers:  
1234, 3214, 1324, 1423, 1342, 1324  
●SOLUTION(s)●  
●"Median" is the middle number of the given set of numbers●  
●We must arrange first the numbers from lowest to highest value●  
●If there are two numbers at the middle portion of the given set of numbers divide it by 2 to get the median●  
●1234, 1324, 1324, 1342, 1423, 3214●  
●There are two numbers at the middle portion which are (2nd) 1324 & 1342. We must divide them by 2 to get the median●  
●1324 + 1342 ÷ 2 = 2666 ÷2 =1333●  
●1333●  
34. Round off to the nearest thousands:  
1357.2468  
●SOLUTION(s)●  
●"1" is the thousands place. We must look at the right side of "1", which is "3"●  
●See explanations in Question #27 starting 2nd explanation●  
●1000●  
35. One number is 6 less than the other. Their sum is 58. What is the number?  
●SOLUTION(s)●  
●Let:  
●x : be the number●  
●x-6 : (6 less than the other number)●  
●58 : sum●  
●Therefore●  
●x+x-6=58●  
●2x=58+6●  
●2x=64●  
LCM of 2 & 64 is 2  
●2x/2 = 64/2●  
●x=32●  
●the answer must be 6 less than the other number, so we must subtract 6 from 32. Therefore●  
●32-6=26●  
●26●  
36. Round off to the nearest hundredths:  
1357.2468  
●SOLUTION(s)●  
●"4" is the hundredths place. We must at the right side of "4", which "6".●  
●See explanations in Question #27 starting 2nd explanation●  
●1357.25●  
37. Find the mode of the ff. numbers:  
1234, 3214, 1324, 1423, 1342, 1324  
●SOLUTION(s)●  
●"Mode" is the number most frequently appeared in the given set of numbers●  
●We must arrange first the given set of numbers from lowest to highest value●  
●If there are two (or more) numbers most frequently appeared in the given set of numbers, that means there are two (or more) mode in the given set of numbers●  
●1234, 1324, 1324, 1342, 1423, 3214●  
●1324 appeared twice in the given set of numbers. 1324 is the mode●  
●1324●  
38. Round off to the nearest tenths:  
1357.2468  
●SOLUTION(s)●  
●"2" is the tenths place. We look at the right side of "2", which is "4".●  
●See explanations in Question #27 starting 2nd explanation●  
●1357.2●  
39. A, E, M, \_\_\_  
●SOLUTION(s)●  
●"A" (1st letter), "1" (1st number)●  
●A, E, M, ?●  
●1, (+4) 5, (+8) 13, (+12) 25 ("Y" is the 25th letter)●  
●None of these (Y)●  
40. Round off to the nearest hundreds:  
1357.2468  
●SOLUTION(s)●  
●"3" is the hundreds place. We must look at the right side of "3", which is "5".●  
●See explanations in Question #27 starting 2nd explanation●  
●1400●  
41. The sum of two numbers is 105. One number is 15 less than the other. What are the numbers?  
●SOLUTION(s)●  
●Let●  
●x : be one of the numbers●  
●x-15 : (15 less than the other number)●  
●105 : sum●  
●Therefore●  
●x+x-15=105●  
●2x=105+15●  
●2x=120●  
LCM of 2 & 120 is 2  
●2x/2 = 120/2●  
●x = 60●  
●The answer must be 15 less than the other number, so must subtract 15 from 60. Therefore●  
●60-15●  
●x=15●  
●None of these (60 & 45)●  
42. Round off to the nearest whole number:  
1357.2468  
●SOLUTION(s)●  
●"7" is the nearest whole number (ones place). We must look at the right side of "7", that is after the decimal point which is "2"●  
●See explanations in Question #27 starting 2nd explanation●  
●1357●  
43. Scientific Notation: Round off up to one decimal place or two significant figures.  
0.00002468  
●See explanations in Question #28●  
●2.5 X 10 ^ -5●  
44. 2, 32, 92, 212, \_\_\_  
●SOLUTION(s)●  
●2, (+30) 32, (+60) 92, (+120) 212, (+240) 452●  
●30, 60, 120, 240 (all numbers are multiplied twice)●  
●452●  
45. Find the mode of the ff. numbers:  
153, 531, 135, 513, 315, 351  
●SOLUTION(s)●  
●135, 153, 315, 351, 513, 531●  
●There is no number most frequently appeared, that means there is no mode in the given set of numbers●  
●See the explanations in Question #37●  
●No mode●  
PART 3: GENERAL INFORMATION  
46. In accordance with law, Ferdinand E. Marcos was qualified to be buried at the Libingan Ng Mga Bayani due to the following reason(s):  
A. He was a former president. B. He was a soldier. C. He was a hero. D. Statements A & B  
E. Statements A, B, & C  
●Statements A & B●  
47. Any person is qualified to run in the presidential race if he is a resident of the Philippines for at least how many year(s) immediately preceding such election?  
●ten years●  
●(Article VII, Section 2)(Executive Department)●  
48. Miss Universe 2016 pageant will be held in the Philippines on what specific date next year?  
●January 30, 2017●  
49. It shall be vested in the Congress of the Philippines which shall consist of a Senate and a House of Representatives, except to the extent reserved to the people by the provision on initiative and referendum.  
●Legislative power●  
●(Article VI, Section 1) (Legislative Department)●  
50. How long does it took Ferdinand E. Marcos before being buried at the Libingan Ng Mga Bayani?  
●27 years●  
●(Former President Ferdinand E. Marcos died on September 11, 1989)●

NOTE:  
THIS IS ONLY A REPOST

◆ANSWER KEY FOR THE FIRST (1ST) 50-ITEM QUIZ WITH EXPLANATIONS & SOLUTIONS◆  
PART 1: ENGLISH  
1. Clarence works for THE Philippine Star to help his family in their daily needs.  
●{the●(article)--- used when to say about a definite person, place or thing (Use before names of newspaper (ex. Philippine Star) }●  
2. Choose two forms of the verb 'to sing' according to the order: Past Simple - Past Participle  
●sang - sung● (sing-sang-sung) (Irregular Verbs)●  
3. King took the bag, WHICH was black.  
●(We use WHICH or THAT in relative clauses when we are talking about things, ex. bag)●  
4. If I WERE Rick, I WOULD STOP talking too much.  
●Second Conditional (When we speak about imaginary situations, which differ from real facts in the present)  
●Form of the Verb●  
(if + past simple, ... would + infinitive)●  
5. This is Kim's umbrella. The umbrella is HERS.  
●(HERS is a possessive pronoun under Third Person which stands for anyone or anything)●  
6. Jim READ the story of Romeo & Juliet when he was ten years old.  
●(Past Simple Tense)   
●Form of the Verb●  
(Subject + Verb (in past form) + Rest of the Sentence)(The action started & ended sometime in the past but the time may or may not be mentioned.)●  
7. Kate is not feeling well, she IS AWAY (to be absent) today.  
●{is away (phrasal verb) which means to be absent}●  
8. I guess that Samsung is a good brand of mobile phone. But my friend Sam thinks that Apple is BETTER.  
●good-better-best● (Irregular adjectives for which the comparative & superlative form follow no particular rule)  
BETTER (comparative degree- comparison between two people or things)●  
9. The old man walks SLOWLY.  
●(SLOWLY is an adverb){Many adverbs of manner (If a verb answers for question 'how' or 'in what manner' then it shows the condition of the verb) have a regular form, are formed from adding 'ly' or 'ily' to the adjective, ex. slow-slowly)●  
10. They travelled from Cagayan to Manila BY car.  
●{BY (preposition) use to indicate a mean or method}●  
11. June can buy all the things that he wants AS LONG AS/PROVIDED/PROVING THAT he works hard.  
●('as long as', 'provided', 'providing that' are snonymous with each other)●  
12. I want TO GO to bed early because I'm not feeling well.  
●{ TO GO (infinitive- is a verb combined with the word 'to)(Most often, an infinitive acts as a noun in the sentence)(Less frequently, it acts as an adjective or an adverb) }●  
13. I miss GOING to my friend's house.  
●{GOING TO (gerund-look exactly the same as a present participle, common to call both forms 'the -ing form) }●  
14. Their team WILL BE PRACTICING at 7 a.m. on Sunday.  
● {Future Continuous Tense  
●Form of the Verb●  
(Subject + will be + Verb + ing + Rest of the Sentence) (Use to express action at a particular moment in the future. However, the action will not have finished at the moment)●  
15. It's natural that I SHOULD treat him that way because he was so rude.  
●{SHOULD (auxiliary verb & modal verb) can be used after various adjectives: Typical examples are: funny, interesting, NATURAL, odd, strange, surprised, surprising, typical) }●  
16. DID I sleep?  
●{DID (auxiliary verb-past tense) + subject + present tense/base form(bare infinitive) of the verb) }.  
17. Jake WAS SLEEPING when the lightning strikes twice.  
●{Past Continuous Tense (Subject + was/were + Verb + ing + Rest of the Sentence)(Longer actions-the action was ongoing until a certain time in the past. This tense is used to talk about an action at a particular time in the past.)●  
18. I think we SHOULD stop listening to him.  
●{SHOULD (auxiliary verb & modal verb) when we give advice, opinion or recommend something)●  
19. She IS READING magazine right now.  
●{Present Continuous Tense (Subject + is + Verb +ing + Rest of the Sentence) (The action is ongoing/still going on & hence continuous. It is used to talk about actions that are happening at this current moment or at the moment)●  
20. He is THE BRAVEST among the troupe.  
●brave-braver-bravest● (For adjectives ending with 'e', 'r' is added for the comparative form & 'est' for the superlative form)  
BRAVEST (superlative degree- comparison between more than two people or things)●  
21. Oceania is part of (-) Australia.  
●no article (-) before names of continents●  
22. We WILL HAVE EATEN by 6 o'clock.  
● {Future Perfect Tense (Subject + will have + Verb(past participle) + Rest of the Sentence) (Expresses an action that will occur in the future before another action or time in the future)●  
23. We could talk to him later, BECAUSE/AS/SEEING THAT we have to leave the house because of the unexpected happenings.  
●'because', 'as', 'seeing that' are synonymous with each other●  
24. Please eat ANOTHER bread.  
●(ANOTHER is used with singular nouns)(OTHER is used with singular or plural nouns)●   
25. We will go to THEIR house tomorrow.  
●(THEIR shows belonging or possession)(THEIRS is a Third Person, plural pronoun of the adjective 'their')(THERE always refers to a place whether concrete or abstract)(THEY'RE is the short form of 'they are')

PART 2: MATHEMATICS  
26. What is 2/5 of 3/8?  
●SOLUTION(s)●  
●"of" means multiplied by●  
●(numerator--2) multiplied by (numerator--3) over (denominator--5) multiplied by (denominator--8)●  
●(2/5 X 3/8 = 6/40 LCD is 2 = 6÷2=3, 40÷2=20 = ●3/20●  
27. What percent of 40 is 22?  
●SOLUTION(s)●  
●(a number) multiplied by (percentage rate) = reduced number  
Given:  
a number: 40  
percentage rate: ?  
reduced number: 22  
●We have to derive another formula by cancellation●  
●(a number) multiplied by (percentage rate) = reduced number●  
●(a number) multiplied by (percentage rate) all over by (a number) = (reduced number) over (a number)●  
●(a number) has been cancelled out on the left side of the equation●  
●therefore, (percentage rate)= (reduced number) over a number●  
●percentage rate = 22/40 = 0.55 (move the decimal point two places to the right)  
●55%●  
28. 3 3/4 multiplied by 4 3/5 is equal to?  
●SOLUTION(s)●  
●(First, we have to convert mixed fractions/numbers which consist of a whole number, a numerator & a denominator) 3 3/4 & 4 3/5 to improper fractions which is (numerator is greater than the denominator)●  
●(whole number) multiplied by (denominator) plus (numerator) over (denominator)●  
●3 3/4 (1st number 3 is the whole number) (4 is the denominator) (2nd number 3 is the numerator), over (4 which is the denominator)●  
●Therefore, (3) multiplied by (4) plus (3) over (4) = 12 + 3 over 4 = 15/4●  
●4 3/5 (4 is the whole number) (5 is the denominator) (3 is the numerator) over (5 which is the denominator)  
therefore, (4) multiplied by (5) plus (3) over (5) = 4 X 5 + 3 over 5 = 20 + 3 over 5 = 23/5●  
●Lastly, (15/4) multiplied by (23/5)  
●(numerator---15) multiplied by (numerator---23) over (denominator---4) multiplied by (denominator---5)●  
●15X23 over 4X5●  
●345/20 (we have to convert improper fraction into a mixed fraction/number●  
●345 divided by 20 = 17( whole number)= (17) multiplied by (20--denominator) is 340 = (345-340) = 5(remainder--this will be the numerator)●  
●(whole number) (numerator over denominator)●  
●Reducing to lowest term●  
●17 5/20(LCD is 5)(5÷5=1, 20÷5=4)●  
●17 1/4●  
29. What is 35% of 260?  
●(a number) multiplied by (percentage rate) = reduced number●  
●SOLUTION(s)●  
Given:  
a number: 260  
percentage rate: 35%  
reduced number: ?  
●(260) multiplied by (35%--move the decimal point two places to the left--0.35) = reduced number●  
●(260) multiplied by (0.35) = reduced number●  
●260 X 0.35  
●91●  
30. Convert 4 7/1000 to decimal.  
●SOLUTION(s)●  
●(4) multiplied by (1000) plus (7) over 1000●  
●4 X 1000 + 7 over 1000●  
●4,000 + 7/1000●  
●4007/1000●  
●4007 divided by 1000  
●4.007●  
31. A pair of shoes marked P550.00 was bought for P220.00. What was the percent discount?  
●SOLUTION(s)●  
Given:  
Original/List/Marked Price: P550.00  
Percent Discount: ?  
Discounted Price: P220.00  
●(Original/List/Marked Price) multiplied by (Percent Discount) = (Discounted Price)●  
●(We have to derive another formula by cancellation)●  
●(Original/List/Marked Price) multiplied by (Percent Discount) over (Original/List/Marked Price) = (Discounted Price) over (Original/List/Marked Price)●  
●(Original/List/Marked Price) has been cancelled out on the left side of the equation●  
●Therefore●  
●(Percent Discount) = (Discounted Price) over (Original/List/Marked Price)●  
●(Percent Discount) = (220) over (550)●  
●(Percent Discount) = 0.40 (move the decimal point two places to the right) = 40%●  
●We have to subtract 100% (constant) to 40%  
●Percent Discount = 100%-40%●  
●60%●  
32. A maong pants was bought for P252.00 at a discount of 28%. What was the marked price?  
●SOLUTION(s)●  
Given:  
Original/List/Marked Price: ?  
Percent Discount: 28% {Must be subtracted from 100%(constant)} = 100%-28% = 72% (move the decimal point two places to the left = 0.72) }  
Discounted Price: P252.00  
●(Original/List/Discounted Price) multiplied by (Percent Discount) = (Discounted Price)●  
●(We have to derive another formula by cancellation)●  
●(Original/List/Marked Price) multiplied by (Percent Discount) over (Percent Discount) = Discounted Price over (Percent Discount)●  
●(Percent Discount) has been cancelled out on the left side of the equation●  
●Therefore●  
●(Original/List/Marked Price) = (Discounted Price) over (Percent Discount)●  
●(Original/List/Marked Price) = (Discounted Price) over (Percent Discount)●  
●Original/List/Marked Price = 252 over 0.72●  
●Original/List/Marked Price = 252/0.72●  
●Original/List/Marked Price = P350.00●  
●P350.00●  
33. Justine's family drank 3 1/2 liters of juice yesterday morning and 3/5 liters of juice yesterday afternoon. How much juice did Justine's family drank in all yesterday?  
●SOLUTION(s)●  
●First, we have to convert 3 1/2 into improper fraction●  
●3 1/2 (3 is the whole number) (1 is the numerator) (2 is the denominator)●  
●(whole number--3) multiplied by (denominator--2) plus (numerator--1) over (denominator--2)●  
●Therefore, (3) multiplied by (2) plus (1) over (2)●  
●3 X 2 + 1 over 2 = 6 + 1 over 2 = 7/2●  
●(7/2) added to (3/5)●  
●(We have to look for the LCD of 2 & 5 which is 10)●  
●(denominator--10) divided by (denominator--2) multiplied by (numerator--7) over (denominator--10) plus (denominator--10) divided (denominator--5) multiplied by (numerator--3) over (denominator--10)●  
●Therefore, (10) divided by (2) multiplied by (7) over (denominator--10) plus (10) divided by (5) multiplied by (3) over (denominator--10)●  
●10 ÷ 2 X 7 over (10) plus 10 ÷ 5 X 3 over (10)●  
●5X7 over 10 plus 2X3 over 10●  
●35/10 + 6/10 = 41/10●  
●We have to convert 41/10 to mixed fraction/number●  
●(whole number) (numerator over denominator)  
●41 divided 10 = 4(whole number) = 10X4 = 40 = 41-40 = 1(remainder, this will be numerator) over 10(denominator)●  
●4 1/10●  
34. Convert 3.03% to fraction.  
●SOLUTION(s)●  
●3.03% (remove the decimal point & % ) = 303/10000 (over 100 yung 3% e may 2 digits pa after decimal point, 2 digits means additional 2 ZEROS(0) po kaya over 10000 po siya)●  
●303/10000●  
35. 8 - 3/4 ÷ 1/8 is equal to?  
●SOLUTION(s)●  
●8 - 3/4 ÷ 1/8●  
●8 - (3/4 ÷ 1/8, in division of fractions, we have to get the reciprocal form of the fraction after (÷). In this quiz, the fraction after (÷) is 1/8. The reciprocal form of 1/8 is 8/1).●  
●Therefore●  
●8 - 3/4 X 8/1●  
●8 - (numerator--3) multiplied by (numerator--8) over (denominator--4) multiplied by (denominator--1)●  
●8 - 3X8 over 4X1●  
●8 - 24 over 4●  
●8 - 24/4●  
●8 - 6●  
●2●  
36. 0.30 is to 0.15, 0.075 is to ?  
●SOLUTION(s)●  
●0.30 is to 0.15 means 0.30 divided by 2 is 0.15●  
●0.075 is to ?●  
●0.075 divided by 2 is 0.0375●  
●0.0375●  
37. 342 is 36% of what number?  
●SOLUTION(s)●  
Given:  
a number: ?  
percentage rate: 36%  
reduced number: 342  
●(a number) multiplied by (percentage rate) = reduced number●  
●We have to derive formula by cancellation●  
●(a number) multiplied by (percentage rate) over (percentage rate) = (reduced number) over (percentage rate)●  
●(percentage rate) has been cancelled out on the left side of the equation●  
●Therefore●  
●(a number) = (reduced number) over (percentage rate)●  
●(a number) = (342) over (36%--move the decimal point two places to the left = 0.36)●  
●(a number) = 342/0.36●  
●(a number) = 950●   
●950●  
38. Convert 4.56% to decimal up to two decimal places.  
●SOLUTION(s)●  
●4.56% (move the decimal point two places to the left) = 0.0456●  
●0.0456--- we have to look for the three digits after the decimal point that is 0.045 to be able to round off the number to two decimal places. We look for the 2nd & 3rd number. 2nd number "4" and 3rd number "5". If the number to be rounded off is 0-4, we retain the number that is found at the left side. If the number to be rounded off is 5-9, we must add 1 to the number found at the left side.  
●0.045● Numbers "4" & "5" are the two numbers.●  
●Therefore●  
●We must add "1" in number "4" because the number at the right side is "5"●  
●0.045● rounded off to two decimal places is equal to 0.05●  
●0.05●  
39. Lowest term of 56/68 and convert it into decimal up to two decimal places.  
●SOLUTION(s)●  
●We must look for LCD of 56 & 68, which is 4● (56÷4=14, 68÷4=17, that is 14/17)●  
●14/17 is 14 divided 17●  
●0.823529● (We must round off the number into two decimal places)  
●We must look at the three digits, that is, 0.823. Number "3" is less than 5, then, we have to retain the number on the left side which is "2". Therefore, the answer is 0.82●  
●0.82●  
40. Lowest term of 56/68 and convert it into percent.  
●SOLUTION(s)●  
●We must look for LCD of 56 & 68, that is 4●  
●(56÷4=14, 68÷4=17, that is 14/17●  
●14/17 is 14 divided by 17●  
●0.823529●  
●We must look at the four digits, that is, 0.8235. Therefore, the answer is 0.8235●  
●0.8235 to percent (move the decimal point two places to the right) = 82.35%●  
●82.35%●  
41. Lowest value among the ff.:   
-1.57%, -15.7%, -157%  
●SOLUTION(s)●  
●-1.57%  
●-15.7%  
●-157%  
●(Lowest number is the lowest value in positive numbers/integers)●  
●(Greatest/highest number is the greatest/highest value in positive numbers/integers)●  
●(Lowest number is the greatest/highest value in negative numbers/integers--ex. is Question #43)●  
●(Greatest/highest number is the lowest value in negative integers--ex. are Questions #41, #42)●  
Correct answer: ●-157%●  
42. Lowest value among the ff.:  
-1/2, -1/3, -1/4, -1/5  
●SOLUTION(s)●  
●-1/2 = -0.50  
●-1/3 = -0.33  
●-1/4 = -0.25  
●-1/5 = -0.20  
●(See explanation in Question #41)●  
Correct answer: ●-1/2●  
43. Greatest value among the ff.:  
-5.64, -4.56, -3.54, -3.45  
●SOLUTION(s)●  
●-3.45  
●-3.54  
●-4.56  
●-5.64  
●(See explanation in Question #41)●  
Correct answer: ●-3.45●  
44. Convert 147/4 into mixed fraction/number.  
●SOLUTION(s)●  
●147/4 means 147 divided 4, that is 36(whole number) = (36) multiplied by (4--denominator) = 144 = 147-144 = 3(remainder--this will be the numerator)●  
●(whole number--36)(numerator--3 over denominator--4)●  
●36 3/4●  
45. Convert 17 5/6 into improper fraction.  
●SOLUTION(s)●  
●(whole number--17) multiplied by (denominator--6) plus (numerator--5) over (denominator--6)●  
●17X6 plus 5 over 6●  
●102 + 5 over 6●  
●107/6●

PART 3: GENERAL INFORMATION  
46. Ronnie Dayan was arrested in what province in Region 1?  
●La Union● (exactly in town of San Juan)  
47. Richard Gomez, being linked in the illegal drug trade, is the current mayor of what city in Leyte?  
●Ormoc City●  
48. Albuera town is located in what Visayas Region?   
●Region 8● Albuera town is located in Leyte which is part of Region 8●  
49. Bill of Rights is in what Article of the 1987 Constitution?  
●Article III●  
50. Any person who wants to run in a senatorial race must be atleast what age?  
●35 years old●  
●Article VI, Section 3 (Legislative Department)●

■PAST TENSES OF THE VERB■

●SIMPLE PAST TENSE●

Positive Statements {Subject + Verb(in past form) + Rest of the Sentence}  
Negative Statements {Subject + didn't + Verb(in base form) + Rest of the Sentence}  
Interrogative Statements/Questions {Did + Subject + Verb(in base form) + Rest of the Sentence}

\* The action is simply mentioned & understood to have taken place in the past. The action started & ended sometime in the past but the time may or may not be mentioned.  
Ex. 1) He PLAYED cricket yesterday. 2) She DIDN'T TALK to Anna last week. 3) DID Angel COMPLETE the work?  
\* Talk about actions happened at a certain or definite time in the past.  
Ex. 1) The Romans CAME to Britain in 54 B.C. 2) Albert Einstein PUBLISHED a paper on the general theory of relativity in 1916.  
\* Talk about actions w/c happened one after the other in the past.  
Ex. 1) I woke up at 7 am, ironed my clothes & WENT out. 2) I put my coat on & TOOK a look in the mirror.  
\* SHORTER ACTIONS  
Ex. 1) We were strolling in the park when suddenly it THUNDERED.  
\* The first action was in progress when suddenly something interrupted it.  
Ex. 1) I was sitting in the cafè when my phone RANG. 2) I was listening to music when my mom ENTERED my room.  
\* Talk about wishes & refer to the future or present.  
Ex. Oh, how I wish it WASN'T so windy.

●PAST CONTINUOUS TENSE●

Positive Statements (Subject + was/were + Verb +ing + Rest of the Sentence)  
Negative Statements (Suject + was not/were not + Verb +ing + Rest of the Sentence)  
Interrogative Statements/Questions {Was/Were + Subject+ Verb(in base form) + Rest of the Sentence}

KEYWORD(s): when, while

\* The action was ongoing until a certain time in the past. This tense is used to talk about an action at a particular time in the past.  
Ex. 1) They WERE SLEEPING at 11 pm last night. 2) I WAS NOT LISTENING to music at 4 pm yesterday. 3) WAS John EATING breakfast at 7 am yesterday? 4) You WERE PLAYING the guitar at 9 o' clock yesterday.  
\* LONGER ACTIONS  
Ex. 1) They WERE SWIMMING in the sea when unexpectedly they saw the burning ship. 2) We WERE WALKING in the park when the rain started. 3) Bob WAS LISTENING to music when the door bell rang.  
\* Talk about two(2) or more simultaneous actions that were going on at a certain moment in the past. (when or while are being used) While- 'during the time that' or 'at the same time as'  
Ex. 1) I WAS DOING yoga while my dog was playing in the garden. 2) I WAS WATCHING TV while the kids were playing in the garden. 3) I WAS WRITING a letter while my wife was cooking.  
\* Talk about an action w/c was in progress at a certain time in the past & if we don't mention when it was started or finished.  
Ex. 1) The children WERE WATCHING 'The Hunger Games' when suddenly the light went out. 2) I WAS WAITING for your call for hours.-Sorry, I was watching TV from 7 until 10 o'clock.

●PAST PERFECT TENSE●

Positive Statements {Subject + had + Verb(past participle) + Rest of the Sentence}  
Negative Statements {Subject + had not + Verb(past particple) + Rest of the Sentence}  
Interrogative Statements/Questions {Had + Subject + Verb(past participle) + Rest of the Sentence}

\* Used to express something that happens before another action in the past.  
Ex. 1) You HAD FINISHED the work. 2) Angel HAD NOT TALKED to my brother. 3)HAD they SEEN the movie? 4) John HAD SPENT 3 years in Pakistan before he became a teacher of Urdu. 5) As soon as Jake HAD ANSWERED, he realized his mistake.  
\* Emphasizes the result of an action in the past before another one.  
Ex. He had been playing all evening & HAD DONE nothing about the house.

●PAST PERFECT CONTINUOUS TENSE●

Positive Statements (Subject + had been + Verb +ing + Rest of the Sentence)  
Negative Statements ( Subject + had not been + Verb +ing + Rest of the Sentence)  
Interrogative Statements/Questions (Had + Subject + been + Verb +ing + Rest of the Sentence)

\* Used to express something that started in the past & continued until another time in the past.  
Ex. You HAD NOT BEEN EXERCISING at the gymnasium.  
\* Emphasizes the duration of an action in the past before another one.  
Ex. 1) Anna HAD BEEN STANDING at the bus stop for 30 minutes. 2) They HAD BEEN LIVING in that house for 3 years. 3) The service company apologized because we HAD BEEN WAITING for our car for 5 hours.  
\* Speaker focuses on the process rather the action.  
Ex. My brother HAD BEEN LOOKING FOR a job for 2 months before they employed him.

■PRESENT TENSES OF THE VERB■

●SIMPLE PRESENT TENSE●

Positive Statements (Subject + Verb + Rest of Sentence)  
Negative Statements (Subject + don't/doesn't + Verb + Rest of the Sentence)  
Interrogative Statements/Questions (Do/Does + Subject + Verb + Rest of the Sentence)

\* The action is simply mentioned & there is nothing being said about its completeness. Ex. Jill WORKS in a hospital.  
\* It is used to talk about an action w/c happens on a regular basis.  
Ex. He GETS UP at 8 o' clock everyday.  
\* Things in general, permanent situations & states or things w/c happen sometimes.  
Ex. Dave VISITS his Granny every month.  
\* General truth & laws of nature.  
Ex. 1) We all know that the Earth IS round. 2) The sun SETS in the west. 3) The Queen of Great Britain LIVES in Buckingham Palace.  
\* Used when we talk about schedules or events w/c will happen in the near future.  
Ex. 1) My plane to Los Angeles DEPARTS at 7:30 pm. 2) Hey, Patrick! Don't forget, that the party STARTS at 9 o' clock.  
\* Regular situations & behaviour.  
Ex. Simon is very busy. He TAKES a rest very seldom.  
\* Talk about summaries & reviews.  
Ex. Christopher EXPLORES the nature of our emotion in his new book. He also GIVES detailed psychological arguments to all conclusions.

●PRESENT CONTINUOUS TENSE●

Positive Statements (Subject + am/is/are + Verb +ing + Rest of the Sentence)  
Negative Statements (Subject + am not/is not/are not + Verb +ing + Rest of the Sentence)  
Interrogative Statements/Questions (Am/Is/Not + Subject + Verb + Rest of the Sentence)

°Time expressions like now, nowadays, at the moment. 'Look' - happening at a certain moment.°

\* The action is on-going/still going on & hence continuous. It is used to talk about actions that are happening at this current moment or at the moment.  
Ex. 1) I am WATCHING TV. 2) They ARE WATCHING TV. 3)The climate IS CHANGING rapidly nowadays. 4) My family IS HAVING supper now. 5) IS he READING a book?  
\* We use this tense when we want to show our irritation or annoyance.  
Ex. 1) She IS always IGNORING me. 2) Don't disturb Tony! He IS WRITING a letter at the moment.  
\* Talking about developing situations.  
Ex. It's better to get rid of this toaster. It IS GETTING more & more insecure.  
\* Talking about temporary situations.  
Ex. It IS GETTING colder. Do you really want to go out?  
\* In case of changing situation.  
Ex. The weather IS IMPROVING. I think we can go roller skating to the park soon.

●PRESENT PERFECT TENSE●

Positive Statements (Subject + has/have + Verb(past participle) + Rest of the Sentence)  
Negative Statements (Subject +has not/have not + Verb(past participle) + Rest of the Sentence)  
Interrogative Statements/Questions (Has/Have + Subject + Verb(past participle) + Rest of the Sentence)

°Time expressions like already, since, yet, for, recently°.

\* The action is complete or has ended & hence termed Perfect. The exact time when the action happened is not important & hence, it is not mentioned in this tense.  
Ex. 1) I HAVE SEEN this movie. 2) HAVE I FINISHED the work?  
\* Action has been completed recently & we see the result of it in the present.   
Ex. Sarah HAS COOKED twenty pancakes today.  
\* The adverb 'already' should be placed between the auxiliary verb 'to have' & the verb w/ -ed or in the Past Participle.  
Ex. It's 10 am, Jake HAS already HAD four cups of coffee this morning.  
\* Period of time that continues from the past until now.  
Ex. 1) Rachel HAS BEEN in Frankfurt since Sunday. 2) Michael HAS HAD this car for 5 years. 3) Where's Monica? I haven't seen her since Monday. She HAS recently BROKEN her arm.  
\* Talking about a time, that started in the past & has the connection w/ the moment in the present.  
Ex. I HAVE LIVED here since childhood & I think I know everyone in our village.  
\* The action started in the Past (Year 2000) & continues in the Present.  
Ex. I HAVE KNOWN Alex since 2000.  
\* The action started in the Past (unstated time) & continues in the Present.  
Ex. Rob HASN'T FINISHED the task yet. (unfinished actions)

●PRESENT PERFECT CONTINUOUS TENSE●

Positive Statements (Subject + has been/have been + Verb +ing + Rest of the Sentence)  
Negative Statements (Subject + has not been/have not been + Verb +ing + Rest of the Sentence)  
Interrogative Statements/Questions (Has/have + Subject + been + Verb +ing + Rest of the Sentence)

\* The action has been taking place for some time & is still on-going. The duration for w/c the action has been going on is usually mentioned.  
Ex. 1) I HAVE BEEN WAITING for an hour. 2) I HAVE NOT BEEN LIVING in London since March. 3) HAS he BEEN WORKING hard for the last 3 days?  
\* When we talked about unspecified period of time & an action w/c started before now & continues in the present.  
Ex. 1) It's just tactlessly of her. I HAVE BEEN WAITING for her all day & she's still not her. 2) My parents HAVE BEEN TRAVELLING since last month & they are not at home yet.  
\* This tense shows that the speaker wants to highlight process rather than a result.  
Ex. Anna has already written an essay & she HAS BEEN CHECKING it out for two hours. Don't interrupt her.  
\* Actions that started in the past & continue in the present.  
Ex. Anna HAS BEEN READING this book for over two months.  
\* Emphasize the duration of the action.  
Ex. 1) Tom HAS BEEN MAKING phone calls to travel agencies all day long. 2) Jarrel HAS BEEN DRIVING all night long.

\*Magagamit po natin sa pag-multiply, pag-divide, LCD, GCD, LCM, GCF, etc.  
(2\*1 to 2\*25, 3\*1 to 3\*25, 4\*1 to 4\*25)  
2\*1=2\_\_\_\_\_3\*1=3\_\_\_\_\_4\*1=4  
2\*2=4\_\_\_\_\_3\*2=6\_\_\_\_\_4\*2=8  
2\*3=6\_\_\_\_\_3\*3=9\_\_\_\_\_4\*3=12  
2\*4=8\_\_\_\_\_3\*4=12\_\_\_\_4\*4=16  
2\*5=10\_\_\_\_3\*5=15\_\_\_\_4\*5=20  
2\*6=12\_\_\_\_3\*6=18\_\_\_\_4\*6=24  
2\*7=14\_\_\_\_3\*7=21\_\_\_\_4\*7=28  
2\*8=16\_\_\_\_3\*8=24\_\_\_\_4\*8=32  
2\*9=18\_\_\_\_3\*9=27\_\_\_\_4\*9=36  
2\*10=20\_\_\_3\*10=30\_\_\_4\*10=40  
2\*11=22\_\_\_3\*11=33\_\_\_4\*11=44  
2\*12=24\_\_\_3\*12=36\_\_\_4\*12=48  
2\*13=26\_\_\_3\*13=39\_\_\_4\*13=52  
2\*14=28\_\_\_3\*14=42\_\_\_4\*14=56  
2\*15=30\_\_\_3\*15=45\_\_\_4\*15=60  
2\*16=32\_\_\_3\*16=48\_\_\_4\*16=64  
2\*17=34\_\_\_3\*17=51\_\_\_4\*17=68  
2\*18=36\_\_\_3\*18=54\_\_\_4\*18=72  
2\*19=38\_\_\_3\*19=57\_\_\_4\*19=76  
2\*20=40\_\_\_3\*20=60\_\_\_4\*20=80  
2\*21=42\_\_\_\_3\*21=63\_\_4\*21=84  
2\*22=44\_\_\_\_3\*22=66\_\_4\*22=88  
2\*23=46\_\_\_\_3\*23=69\_\_4\*23=92  
2\*24=48\_\_\_\_3\*24=72\_\_4\*24=96  
2\*25=50\_\_\_\_3\*25=75\_\_4\*25=100  
(5\*1 to 5\*25, 6\*1 to 6\*25, 7\*1 to 7\*25)  
5\*1=5\_\_\_\_\_\_6\*1=6\_\_\_\_\_7\*1=7  
5\*2=10\_\_\_\_\_6\*2=12\_\_\_7\*2=14  
5\*3=15\_\_\_\_\_6\*3=18\_\_\_7\*3=21  
5\*4=20\_\_\_\_\_6\*4=24\_\_\_7\*4=28  
5\*5=25\_\_\_\_\_6\*5=30\_\_\_7\*5=35  
5\*6=30\_\_\_\_\_6\*6=36\_\_\_7\*6=42  
5\*7=35\_\_\_\_\_6\*7=42\_\_\_7\*7=49  
5\*8=40\_\_\_\_\_6\*8=48\_\_\_7\*8=56  
5\*9=45\_\_\_\_\_6\*9=54\_\_\_7\*9=63  
5\*10=50\_\_\_\_6\*10=60\_\_7\*10=70  
5\*11=55\_\_\_\_6\*11=66\_\_7\*11=77  
5\*12=60\_\_\_\_6\*12=72\_\_7\*12=84  
5\*13=65\_\_\_\_6\*13=78\_\_7\*13=91  
5\*14=70\_\_\_\_6\*14=84\_\_7\*14=98  
5\*15=75\_\_\_\_6\*15=90\_\_7\*15=105  
5\*16=80\_\_\_\_6\*16=96\_\_7\*16=112  
5\*17=85\_\_\_6\*17=102\_7\*17=119  
5\*18=90\_\_\_6\*18=108\_7\*18=126  
5\*19=95\_\_\_6\*19=124\_7\*19=133  
5\*20=100\_\_6\*20=120\_7\*20=140  
5\*21=105\_\_6\*21=126\_7\*21=147  
5\*22=110\_\_6\*22=132\_7\*22=154  
5\*23=115\_\_6\*23=138\_7\*23=161  
5\*24=120\_\_6\*24=144\_7\*24=168  
5\*25=125\_\_6\*25=150\_7\*25=175  
(8\*1 to 8\*25, 9\*1 to 9\*25, 10\*1 to 10\*25)  
8\*1=8\_\_\_\_\_\_9\*1=9\_\_\_\_\_10\*1=10  
8\*2=16\_\_\_\_\_9\*2=18\_\_\_10\*2=20  
8\*3=24\_\_\_\_\_9\*3=27\_\_\_10\*3=30  
8\*4=32\_\_\_\_\_9\*4=36\_\_\_10\*4=40  
8\*5=40\_\_\_\_\_9\*5=45\_\_\_10\*5=50  
8\*6=48\_\_\_\_\_9\*6=54\_\_\_10\*6=60  
8\*7=56\_\_\_\_\_9\*7=63\_\_\_10\*7=70  
8\*8=64\_\_\_\_\_9\*8=72\_\_\_10\*8=80  
8\*9=72\_\_\_\_\_9\*9=81\_\_\_10\*9=90  
8\*10=80\_\_\_\_9\*10=90\_\_10\*10=100  
8\*11=88\_\_\_\_9\*11=99\_\_10\*11=110  
8\*12=96\_\_\_\_9\*12=108\_10\*12=120  
8\*13=104\_\_\_9\*13=117\_10\*13=130  
8\*14=112\_\_\_9\*14=126\_10\*14=140  
8\*15=120\_\_\_9\*15=135\_10\*15=150  
8\*16=128\_\_\_9\*16=144\_10\*16=160  
8\*17=136\_\_\_9\*17=153\_10\*17=170  
8\*18=144\_\_\_9\*18=162\_10\*18=180  
8\*19=152\_\_\_9\*19=171\_10\*19=190  
8\*20=160\_\_\_9\*20=180\_10\*20=200  
8\*21=168\_\_\_9\*21=189\_10\*21=210  
8\*22=176\_\_\_9\*22=198\_10\*22=220  
8\*23=184\_\_\_9\*23=207\_10\*23=230  
8\*24=192\_\_\_9\*24=216\_10\*24=240  
8\*25=200\_\_\_9\*25=225\_10\*25=250

LEAST COMMON MULTIPLE (LCM) & GREATEST COMMON FACTOR (GCF)

LEAST COMMON MULTIPLE (LCM)  
Mag-iisip po tayo ng number na eksaktong mag-di-divide sa iba pang numbers na walang remainder at whole number dapat yung sagot. Mas mataas po yung gagamiting L.C.M. kaysa sa given numbers. May pagkakatulad po sila sa LCD/GCD, ang pagkakaiba po nila ay ginagamit ang LCD/GCD sa fractions, samantalang ginagamit naman yung L.C.M. sa whole numbers, numbers in decimal form.  
Ex.  
LCM of 7 & 14 = 14 (14÷7=2, 14÷14=1)  
LCM of 2.5 & 7.5 = 7.5 (7.5÷2.5=3, 7.5÷7.5=1)  
Sa numbers in decimal form, mas mabilis po natin makukuha yung L.C.M. nila kapag i-convert po muna natin sila sa whole numbers pero kailangan numbers in decimal form din yung sagot. Trial & Error Method po yung isang paraan para makuha yung L.C.M., kasama po dun yung pag-so-solve gamit yung mga choices sa questions.

GREATEST COMMON FACTOR (GCF)  
Mag-iisip po tayo ng number na eksaktong ma-i-di-divide sa given numbers na whole number dapat yung sagot. Kapag numbers in decimal form, kailangan i-convert po muna natin sila sa whole number para mas madaling makuha yung GCF, pero numbers in decimal form pa rin yung sagot. Mas mababa po yung gagamiting G.C.F. kaysa sa given numbers. Trial & Error Method po yung isang paraan sa pagkuha ng G.C.F., kasama po dun yung pag-so-solve gamit yung mga choices sa questions.  
Ex. GCF of 4 & 12 = 4 (4÷4=1, 12÷4=3)

1) Find the G.C.F. of each of the ff.:  
a) 6, 10  
SOLUTION:  
6÷2=3  
10÷2=5  
2 √

b) 18, 42  
SOLUTION:  
18÷6=3  
42÷6=7  
6 √

c) 12, 48, 60  
SOLUTION:  
12÷12=1  
48÷12=4  
60÷12=5  
12 √

d) 56, 72  
SOLUTION:  
56÷8=7  
72÷8=9  
8 √

e) 225, 75  
SOLUTION:  
225÷75=3  
75÷75=1  
75 √

2) Find the L.C.M. of each of the ff.:  
a) 3, 4  
SOLUTION:  
12÷3=4  
12÷4=3  
12 √

b) 2, 5  
SOLUTION:  
10÷2=5  
10÷5=2  
10 √

c) 3, 6, 8  
SOLUTION:  
24÷3=8  
24÷6=4  
24÷8=3  
24 √

d) 3, 4, 5  
SOLUTION:  
60÷3=20  
60÷4=15  
60÷5=12  
60 √

e) 6, 12, 15  
SOLUTION:  
60÷6=10  
60÷12=5  
60÷15=4  
60 √

3)Find the greatest number that will divide 43, 91, 183 so as to leave the same remainder in each case.  
A. 7  
B. 13  
C. 9  
D. 4 √  
E. 15  
SOLUTION:  
(91-43), (183-91), & (183-43)  
48, 92, 140  
48÷4=12  
92÷4=23  
140÷4=35

4) The smallest number which is divisible by 12, 16, 18, 21 & 28.  
A. 1,038  
B. 1,048  
C. 1,018  
D. 1,028  
E. 1,008 √  
SOLUTION:  
1,008÷12=84  
1,008÷16=63  
1,008÷18=56  
1,008÷21=48  
1,008÷28=36

5) Three different containers contain 496 liters, 403 liters & 713 liters of mixtures of milk & water respectively. What biggest measure can measure all the different quantities exactly?  
A. 41 liters  
B. 61 liters  
C. 21 liters  
D. 31 liters √  
E. 51 liters  
SOLUTION:  
496÷31=16  
403÷31=13  
713÷31=23

6) The maximum numbers of students among them, 1001 pens & 910 pencils can be distributed in such a way that each student gets the same number of pens & same number of pencils.  
A. 910  
B. 91 √  
C. 1,001  
D. 101  
E. 1,911  
SOLUTION:  
1,001÷91=11  
910÷91=10

7) Find the greatest possible length which can be used to measure exactly the length of 700 cm, 385 cm & 1,295 cm.  
A. 55 cm  
B. 35 cm √  
C. 15 cm  
D. 45 cm  
E. 25 cm  
SOLUTION:  
700÷35=20  
385÷35=11  
1,295÷35=37

8) Find the G.C.F of 1.08, 0.36 and 0.9.  
A. 0.18 √  
B. 0.9   
C. 0.03  
D. 0.6  
E. 0.108  
SOLUTION:  
(Gagawin po muna natin silang whole number para mas madali po natin makuha yung LCM/GCF, pero number in decimal form pa rin po yung sagot kung number in decimal form yung tanong.)  
1.08=108÷18=6  
0.36=36÷18=2  
0.90=90÷18=5  
18=0.18 √

9) A rectangular court, 3.78 meters long & 5.25 meters wide is to be paved exactly with square tiles, all of the same size. What is the largest size of the tile which could be used for the purpose?  
A. 14 cm  
B. 21 cm √  
C. 35 cm  
D. 42 cm  
E. 28 cm  
SOLUTION:  
1 m = 100 cm (1\*100=100)  
3.78 m \* 100 = 378 cm  
5.25 m \* 100 = 525 cm  
378÷21=18  
525÷21=25

10) In a disco, the red lights blink every 3 seconds & the blue lights blink every 10 seconds. The two lights blink every \_\_\_ seconds.  
SOLUTION:  
30÷3=10  
30÷10=3  
30 √

ALGEBRA

BASIC FACTS & PROPERTIES  
(a) Arithmetic Operations  
• ab+ac = a(b+c)  
• a/b + c/d = ad+bc (all over) bd  
• ab+ac (all over a)=b+c, a (is not equal to) 0  
• a (over) (b/c) = ac/b  
• a+b (over) c = a/c + b/c  
• a (b/c) = ab/c  
• a-b (over) c-d = b-a (over) d-c  
• a/b - c/d = ad - bc (all over) bd  
• (a/b) over (c/d) = ad/bc

(b) Exponent Properties  
NOTE:  
\* (means multiplied by - multiplication)  
^ (raised to the power of - exponent)  
< (less than)  
> (greater than)  
√ (square root)

• a^n \* a^m = a^n+m  
• (ab)^n = (a^n)(b^n)  
• (a/b)^-n = (b/a)^n = b^n (over) a^n  
• a^n (over) a^m = a^n-m = 1 (over) a^m-n  
• a^0 = 1, a (is not equal to 0)  
• a \* n/m = (a \* 1/m)^n = (a^n) \* (1/m)

(c) Properties of Radicals  
• n √a = a \* 1/n  
• n √ab = n √a \* n √b  
• n √a^n = a, if n is odd  
• n √a^n = |a|, if n is even  
• m √n √a = nm √a  
• n √a/b = n √a (over) n √b

(d) Properties of Inequalities  
• If a < b, then  
(a+c) < (b+c) & (a-c) < (b-c)  
• If a < b & c > 0, then  
ac < bc & a/c < b/c  
• If a < b & c < 0, then  
ac > bc & a/c > b/c

(e) Properties of Absolute Value  
• | a | = a if a (is greater than or equal to) 0  
• |a| = -a if a < 0  
• |a| (is greater than or equal to) 0 (Important)  
• |ab| = |a| |b|  
• |a+b| (is less than or equal to) |a| + |b|  
• |-a| = |a|  
• |a/b| = |a|/|b|

BASIC CONCEPTS  
1) Properties of Exponents

• a) a^n \* a^m = a^(n+m)  
Ex. a^-9 \* a^5 = a^-9+5 = a^-4

• b) (a^n)^m = a^n\*m  
Ex. (a^5)^2 = a^5\*2 = a^10

• c) a^n (over) a^m = a^n-m = 1 (over) a^m-n , a (is not equal to) 0  
Ex. a^5 (over) a^7 = a^5-7 = a^-2 = 1 (over) a^2

• d) (ab)^n = a^n \* b^n  
Ex. (ab)^3 = a^3 \* b^3

• e) (a/b)^n = a^n (over) b^n , b (is not equal to) 0  
Ex. (a/b)^2 = a^2 (over) b^2

• f) (a/b)^-n = (b/a)^n = b^n (over) a^n  
Ex. (a/b)^-2 = (b/a)^2 = b^2 (over) a^2

• g) a^-n (over) b^-m = b^m (over) a^n  
Ex. a^-3 (over) b^-5 = b^5 (over) a^3

• h) (a^n \* b^m)^k = a^n\*k \* b^m\*k  
Ex. (a^2 \* b^-2)^3 = a^2\*3 \* b^-2\*3  
a^6 \* b^-6

• i) (a^n/b^m)^k = a^n\*k (over) b^m\*k  
Ex. (a^2/b^3)^2 = a^2\*2 (over) b^3\*2 = a^4/b^6

2) Polynomials & Factoring  
(a) Basics of Polynomials  
Polynomials in one variable are algebraic expressions that consist of terms in the form ax^n, where "n" is a non-negative (i.e., positive or zero) integer & "a" is a real number & is called the coefficient of the term.

The degree of the polynomial is the largest exponent in the polynomial.  
Ex.  
• 4x^10 - 10x^5 + 19x + 6 (Degree = 10)  
• 4x^2 + 19x + 6 (Degree = 2)  
• 19x + 6 (Degree = 1)  
• 6 (Degree = 0)  
NOTE: 19x + 6 can be written as 19x^1 + 6x^0, & 6 can be written as 6x^0

(b) Addition/Subtraction of Polynomials  
To add two polynomials, all we have to do is to combine like terms.

Ex.  
Add 6x^4 + 7x^2 to 6x^3 - x^2 - 5  
(6x^4 + 7x^2 + 6) + (6x^3 - x^2 - 5)  
6x^4 + 6x^3 + 7x^2 - x^2 + 6 - 5  
6x^4 + 6x^3 + 6x^2 + 1

Ex.  
Subract 6x^3 - x^2 from 6x^4 + 7x^2 + 6  
(6x^4 + 7x^2 + 6) - (6x^3 - x^2)  
(6x^4 + 7x^2 + 6 - 6x^3 - (-x^2)  
6x^4 + 7x^2 + 6 - 6x^3 + x^2  
6x^4 - 6x^3 + 8x^2 + 6

(c) Multiplication of Polynomials  
Ex.  
Multiply (3x + 5)(x - 10)  
We will use FOIL Method of multiplication. It's actually simple.  
(3x + 5)(x -10)  
3x(x) -- First Terms  
3x(-10) -- Outer Terms  
5(x) -- Inner Terms  
5(-10) -- Last Terms  
= 3x(x) + 3x(-10) + 5(x) + 5(-10)  
= 3x^2 + (-30x) + 5x + (-50)  
= 3x^2 - 30x + 5x - 50  
= 3x^2 - 25x - 50

FACTORING & SOLVING FORMULAS

NOTE:  
^ (raised to the power of - exponent)  
\* (multiplied by - multiplication)  
√ (square root)  
< (less than)  
> (greater than)  
= (equals/equal to)

(a) Factoring Formulas  
• x^2 - a^2 = (x+a)(x-a)  
• x^2 + 2ax + a^2 = (x+a)^2  
• x^2 - 2ax + a^2 = (x-a)^2  
• x^2 + (a+b)x + ab = (x+a)(x+b)

(b) Quadratic Formula  
If ax^2 + bx + c= 0, a (is not equal to) 0, then  
x= -b +/- √b^2 - 4ac (all over) 2a  
• If b^2 - 4ac > 0, then  
Two real unequal solutions  
• If b^2 - 4ac = 0, then  
repeated Real solutions  
• If b^2 - 4ac < 0, then  
Two Complex solutions

(c) Square Root Property  
If x^2 = p, then x = +/- √p

FACTORING & SOLVING METHODS

(a) Solving Linear Equations  
Linear Equations  
A linear equation is any equation that can be written in the form:  
ax + b = 0  
Where, "a" is a real number & "x" is a variable.

Process of solving Linear Equations  
Step 1: If the equation contains any fractions, use the Least Common Denominator (LCD) to clear the fractions. We will do this by multiplying both sides of the equation by the LCD.

Step 2: Simplify both sides of the equation. This means clearing out any parenthesis, & combining like terms.

Step 3: Try to get all terms with the variable in them on one side of the equation (combining into a single term of course) & all constants on the other side.

Step 4: Make the coefficient of the variable as 1. We usually just divide both sides of the equation by the coefficient if it is an integer or multiply both sides of the equation by the reciprocal of the coefficient if it is a fraction.

Step 5: VERIFY YOUR ANSWER! We verify the answer by plugging the results from the previous steps into the original equation. If the answer is correct, then the equation will hold good.

NOTE:  
Also, if there were fractions in the problem & there were values of the variable that give division by zero, it is important to make sure that one of these values didn't end up in the solution set.

Ex.  
Solve 3(x+5) = 2(-6-x)-2x

Step 1: No Fraction.

Step 2: Simplify both sides.  
Clear out any parenthesis by multiplying the numbers through & then combine like terms.  
3(x+5) = 2(-6-x)-2x  
3(x)+3(5) = 2(-6)+2(-x)-2x  
3x + 15 = -12 - 2x - 2x  
3x + 15 = -12 - 4x

Step 3: Get all the "x" terms on one side & all the numbers on the other side.  
3x + 15 = -12 - 4x  
3x + 4x = -12 - 15  
7x = -27

Step 4: Get a coefficient of 1 in front of the "x". We can do this by dividing both sides by a "7".  
7x = -27  
7x/7 = -27/7  
x = -27/7

Step 5: Verifying the answer.  
Plug in x= -27/7 in the original equation.  
3(-27/7)+5 = 2(-6-(27/7)-2(-27/7)  
3(8/7) = 2 (-15/7)+54/7  
24/7 = 24/7 OK

(b) Solving Quadratic Equations:  
Quadratic Equations:  
A quadratic Equation is any equation that can be written in the form:  
ax^2 + bx + c = 0, a (is not equal to) 0

(b1) Solving by Factoring  
Ex.  
x^2 - x = 12  
x^2 - x - 12 = 0  
(x-4)(x+3)=0  
(x-4)=0 or (x+3)=0  
x=4 or x= -3

Checking: (substituting x=4)  
x^2 - x - 12 = 0  
4^2 - 4 - 12 = 0  
16 - 4 - 12 = 0  
12 - 12 = 0  
0 = 0

Checking: (substituting x= -3)  
x^2 - x - 12 = 0  
(-3)^2 - (-3) - 12 = 0  
9 + 3 - 12 = 0  
12 - 12 = 0  
0 = 0  
So, x=4 & x= -3 are in fact solutions to the given quadratic equation.  
Solution set = {-3,4}

(b2) Square root Property  
If p^2 = d, then p = +/- √d (i.e., p = + √d, - √d)

Ex. 1:  
Solve x^2 - 100 = 0  
x^2 = 100  
x= +/- √100 = +/- 10  
So, there are two solutions for the given quadratic equation, x= +10, -10

Ex. 2:  
Solve (3x+10)^2 + 81 = 0  
(3x + 10)^2 = -81  
3x + 10 = √-81  
3x + 10 = +/- 9i  
3x = -10 +/- 9i  
3x/3 = -10/3 +/- 9i/3  
x= -10/3 +/- 3i  
So, we have two complex solutions to this given equation.

SOLVING ABSOLUTE VALUE EQUATIONS  
Ex.  
|4| = 4 because 4 (is greater than or equal to) 0  
|-7| = 7 because -7 < 0  
|0| = 0 because 0 (is greater than or equal to) 0

Ex. 1:  
Solve |2x-5| = 9  
2x - 5 = 9  
2x = 9+5  
2x = 14  
2x/2 = 14/2  
x = 7  
OR  
2x - 5 = -9  
2x = -9 + 5  
2x = -4  
2x/2 = -4/2  
x = -2  
So, the solutions to the equation are -2 & 7.

Ex. 2:  
Solve |5x-9| = 0  
5x - 9 = 0  
5x/5 - 9/5 = 0  
x = 9/5  
We have only one solution.

Ex. 3: |5x+9| = -3  
We can't have a negative value out of the absolute value. So, there is no solution to the above equation.

ALGEBRA

BASIC FACTS & PROPERTIES  
(a) Arithmetic Operations  
• ab+ac = a(b+c)  
• a/b + c/d = ad+bc (all over) bd  
• ab+ac (all over a)=b+c, a (is not equal to) 0  
• a (over) (b/c) = ac/b  
• a+b (over) c = a/c + b/c  
• a (b/c) = ab/c  
• a-b (over) c-d = b-a (over) d-c  
• a/b - c/d = ad - bc (all over) bd  
• (a/b) over (c/d) = ad/bc

(b) Exponent Properties  
NOTE:  
\* (means multiplied by - multiplication)  
^ (raised to the power of - exponent)  
< (less than)  
> (greater than)  
√ (square root)

• a^n \* a^m = a^n+m  
• (ab)^n = (a^n)(b^n)  
• (a/b)^-n = (b/a)^n = b^n (over) a^n  
• a^n (over) a^m = a^n-m = 1 (over) a^m-n  
• a^0 = 1, a (is not equal to 0)  
• a \* n/m = (a \* 1/m)^n = (a^n) \* (1/m)

(c) Properties of Radicals  
• n √a = a \* 1/n  
• n √ab = n √a \* n √b  
• n √a^n = a, if n is odd  
• n √a^n = |a|, if n is even  
• m √n √a = nm √a  
• n √a/b = n √a (over) n √b

(d) Properties of Inequalities  
• If a < b, then  
(a+c) < (b+c) & (a-c) < (b-c)  
• If a < b & c > 0, then  
ac < bc & a/c < b/c  
• If a < b & c < 0, then  
ac > bc & a/c > b/c

(e) Properties of Absolute Value  
• | a | = a if a (is greater than or equal to) 0  
• |a| = -a if a < 0  
• |a| (is greater than or equal to) 0 (Important)  
• |ab| = |a| |b|  
• |a+b| (is less than or equal to) |a| + |b|  
• |-a| = |a|  
• |a/b| = |a|/|b|

BASIC CONCEPTS  
1) Properties of Exponents

• a) a^n \* a^m = a^(n+m)  
Ex. a^-9 \* a^5 = a^-9+5 = a^-4

• b) (a^n)^m = a^n\*m  
Ex. (a^5)^2 = a^5\*2 = a^10

• c) a^n (over) a^m = a^n-m = 1 (over) a^m-n , a (is not equal to) 0  
Ex. a^5 (over) a^7 = a^5-7 = a^-2 = 1 (over) a^2

• d) (ab)^n = a^n \* b^n  
Ex. (ab)^3 = a^3 \* b^3

• e) (a/b)^n = a^n (over) b^n , b (is not equal to) 0  
Ex. (a/b)^2 = a^2 (over) b^2

• f) (a/b)^-n = (b/a)^n = b^n (over) a^n  
Ex. (a/b)^-2 = (b/a)^2 = b^2 (over) a^2

• g) a^-n (over) b^-m = b^m (over) a^n  
Ex. a^-3 (over) b^-5 = b^5 (over) a^3

• h) (a^n \* b^m)^k = a^n\*k \* b^m\*k  
Ex. (a^2 \* b^-2)^3 = a^2\*3 \* b^-2\*3  
a^6 \* b^-6

• i) (a^n/b^m)^k = a^n\*k (over) b^m\*k  
Ex. (a^2/b^3)^2 = a^2\*2 (over) b^3\*2 = a^4/b^6

2) Polynomials & Factoring  
(a) Basics of Polynomials  
Polynomials in one variable are algebraic expressions that consist of terms in the form ax^n, where "n" is a non-negative (i.e., positive or zero) integer & "a" is a real number & is called the coefficient of the term.

The degree of the polynomial is the largest exponent in the polynomial.  
Ex.  
• 4x^10 - 10x^5 + 19x + 6 (Degree = 10)  
• 4x^2 + 19x + 6 (Degree = 2)  
• 19x + 6 (Degree = 1)  
• 6 (Degree = 0)  
NOTE: 19x + 6 can be written as 19x^1 + 6x^0, & 6 can be written as 6x^0

(b) Addition/Subtraction of Polynomials  
To add two polynomials, all we have to do is to combine like terms.

Ex.  
Add 6x^4 + 7x^2 to 6x^3 - x^2 - 5  
(6x^4 + 7x^2 + 6) + (6x^3 - x^2 - 5)  
6x^4 + 6x^3 + 7x^2 - x^2 + 6 - 5  
6x^4 + 6x^3 + 6x^2 + 1

Ex.  
Subract 6x^3 - x^2 from 6x^4 + 7x^2 + 6  
(6x^4 + 7x^2 + 6) - (6x^3 - x^2)  
(6x^4 + 7x^2 + 6 - 6x^3 - (-x^2)  
6x^4 + 7x^2 + 6 - 6x^3 + x^2  
6x^4 - 6x^3 + 8x^2 + 6

(c) Multiplication of Polynomials  
Ex.  
Multiply (3x + 5)(x - 10)  
We will use FOIL Method of multiplication. It's actually simple.  
(3x + 5)(x -10)  
3x(x) -- First Terms  
3x(-10) -- Outer Terms  
5(x) -- Inner Terms  
5(-10) -- Last Terms  
= 3x(x) + 3x(-10) + 5(x) + 5(-10)  
= 3x^2 + (-30x) + 5x + (-50)  
= 3x^2 - 30x + 5x - 50  
= 3x^2 - 25x - 50

FACTORING & SOLVING FORMULAS

NOTE:  
^ (raised to the power of - exponent)  
\* (multiplied by - multiplication)  
√ (square root)  
< (less than)  
> (greater than)  
= (equals/equal to)

(a) Factoring Formulas  
• x^2 - a^2 = (x+a)(x-a)  
• x^2 + 2ax + a^2 = (x+a)^2  
• x^2 - 2ax + a^2 = (x-a)^2  
• x^2 + (a+b)x + ab = (x+a)(x+b)

(b) Quadratic Formula  
If ax^2 + bx + c= 0, a (is not equal to) 0, then  
x= -b +/- √b^2 - 4ac (all over) 2a  
• If b^2 - 4ac > 0, then  
Two real unequal solutions  
• If b^2 - 4ac = 0, then  
repeated Real solutions  
• If b^2 - 4ac < 0, then  
Two Complex solutions

(c) Square Root Property  
If x^2 = p, then x = +/- √p

FACTORING & SOLVING METHODS

(a) Solving Linear Equations  
Linear Equations  
A linear equation is any equation that can be written in the form:  
ax + b = 0  
Where, "a" is a real number & "x" is a variable.

Process of solving Linear Equations  
Step 1: If the equation contains any fractions, use the Least Common Denominator (LCD) to clear the fractions. We will do this by multiplying both sides of the equation by the LCD.

Step 2: Simplify both sides of the equation. This means clearing out any parenthesis, & combining like terms.

Step 3: Try to get all terms with the variable in them on one side of the equation (combining into a single term of course) & all constants on the other side.

Step 4: Make the coefficient of the variable as 1. We usually just divide both sides of the equation by the coefficient if it is an integer or multiply both sides of the equation by the reciprocal of the coefficient if it is a fraction.

Step 5: VERIFY YOUR ANSWER! We verify the answer by plugging the results from the previous steps into the original equation. If the answer is correct, then the equation will hold good.

NOTE:  
Also, if there were fractions in the problem & there were values of the variable that give division by zero, it is important to make sure that one of these values didn't end up in the solution set.

Ex.  
Solve 3(x+5) = 2(-6-x)-2x

Step 1: No Fraction.

Step 2: Simplify both sides.  
Clear out any parenthesis by multiplying the numbers through & then combine like terms.  
3(x+5) = 2(-6-x)-2x  
3(x)+3(5) = 2(-6)+2(-x)-2x  
3x + 15 = -12 - 2x - 2x  
3x + 15 = -12 - 4x

Step 3: Get all the "x" terms on one side & all the numbers on the other side.  
3x + 15 = -12 - 4x  
3x + 4x = -12 - 15  
7x = -27

Step 4: Get a coefficient of 1 in front of the "x". We can do this by dividing both sides by a "7".  
7x = -27  
7x/7 = -27/7  
x = -27/7

Step 5: Verifying the answer.  
Plug in x= -27/7 in the original equation.  
3(-27/7)+5 = 2(-6-(27/7)-2(-27/7)  
3(8/7) = 2 (-15/7)+54/7  
24/7 = 24/7 OK

(b) Solving Quadratic Equations:  
Quadratic Equations:  
A quadratic Equation is any equation that can be written in the form:  
ax^2 + bx + c = 0, a (is not equal to) 0

(b1) Solving by Factoring  
Ex.  
x^2 - x = 12  
x^2 - x - 12 = 0  
(x-4)(x+3)=0  
(x-4)=0 or (x+3)=0  
x=4 or x= -3

Checking: (substituting x=4)  
x^2 - x - 12 = 0  
4^2 - 4 - 12 = 0  
16 - 4 - 12 = 0  
12 - 12 = 0  
0 = 0

Checking: (substituting x= -3)  
x^2 - x - 12 = 0  
(-3)^2 - (-3) - 12 = 0  
9 + 3 - 12 = 0  
12 - 12 = 0  
0 = 0  
So, x=4 & x= -3 are in fact solutions to the given quadratic equation.  
Solution set = {-3,4}

(b2) Square root Property  
If p^2 = d, then p = +/- √d (i.e., p = + √d, - √d)

Ex. 1:  
Solve x^2 - 100 = 0  
x^2 = 100  
x= +/- √100 = +/- 10  
So, there are two solutions for the given quadratic equation, x= +10, -10

Ex. 2:  
Solve (3x+10)^2 + 81 = 0  
(3x + 10)^2 = -81  
3x + 10 = √-81  
3x + 10 = +/- 9i  
3x = -10 +/- 9i  
3x/3 = -10/3 +/- 9i/3  
x= -10/3 +/- 3i  
So, we have two complex solutions to this given equation.

SOLVING ABSOLUTE VALUE EQUATIONS  
Ex.  
|4| = 4 because 4 (is greater than or equal to) 0  
|-7| = 7 because -7 < 0  
|0| = 0 because 0 (is greater than or equal to) 0

Ex. 1:  
Solve |2x-5| = 9  
2x - 5 = 9  
2x = 9+5  
2x = 14  
2x/2 = 14/2  
x = 7  
OR  
2x - 5 = -9  
2x = -9 + 5  
2x = -4  
2x/2 = -4/2  
x = -2  
So, the solutions to the equation are -2 & 7.

Ex. 2:  
Solve |5x-9| = 0  
5x - 9 = 0  
5x/5 - 9/5 = 0  
x = 9/5  
We have only one solution.

Ex. 3: |5x+9| = -3  
We can't have a negative value out of the absolute value. So, there is no solution to the above equation.

VERY IMPORTANT https://www.facebook.com/images/emoji.php/v9/f4c/1/16/1f642.png:)  
●CONVERSION OF DECIMAL TO FRACTION●  
1.1 (remove the decimal point) = 11/10  
1.11 (remove the decimal point) = 111/100  
1.111 (remove the decimal point) = 1111/1000  
Technique: titignan po natin kung ilan yung digit after ng decimal point.  
1 digit = over 10  
2 digits = over 100  
3 digits = over 1,000  
●CONVERSION OF PERCENT TO FRACTION●  
1% = 1/100 (percent means hundreds kaya over 100)  
1.1% (remove the decimal point & %) = 11/1000 (over 100 yung 1% e may 1 digit after decimal point 1 digit means additional 1 ZERO(0) kaya over 1,000 xa)  
1.11% (remove the decimal point & %) = 111/10,000 (over 100 yung 1% e may 2 digits after decimal point, 2 digits means additional 2 ZEROS(0) po kaya over 10,000 po xa)  
●CONVERSION OF DECIMAL TO PERCENT●  
1.1 (move the decimal point two places to the right) = 110%  
1.11 (move the decimal point two places to the right) = 111%  
1.111 (move the decimal point two places to the right) = 111.1%  
●CONVERSION OF FRACTION TO PERCENT●  
1/100 (1 divided by 100 > 0.01 > move the decimal point two places to the right) = 1%  
11/1000 (11 divided by 1000 > 0.011 > move the decimal point two places to the right) = 1.1%  
111/10000 (111 divided 10000 > 0.0111 > move the decimal point two places to the right) = 1.11%  
●CONVERSION OF PERCENT TO DECIMAL●  
1.1% (move the decimal point two places to the left) = 0.011  
1.11% (move the decimal point two places to the left) = 0.0111  
1.111% (move the decimal point two places to the left) = 0.01111  
●CONVERSION OF FRACTION TO DECIMAL●  
11/10 (11 divided by 10) = 1.1  
111/100 (111 divided by 100) = 1.11  
1111/1000 (1111 divided by 1000) = 1.111

ROMAN NUMERAL = HINDU ARABIC  
I = 1  
V = 5  
X = 10  
L = 50  
C = 100  
D = 500  
M = 1,000  
\*EXAMPLES\*  
XL = 40 (kasi po X is 10 at L is 50) pag nauna yung lower value, ibig sabihin, i-su-subtract yung X(10) sa L(50) = 50-10=40  
LX = 60 (kasi po L is 50 at X is 10) pag nauna yung higher value, ibig sabihin, i-a-add yung L(50) sa X(10) = 50+10=60  
CM = 900 (kasi po C is 100 at M is 1,000) pag nauna yung lower value, ibig sabihin, i-su-subtract yung C(100) sa M(1,000) = 1,000-100=900  
MC = 1,100 (kasi po M is 1,000 at C is 100) pag nauna yung higher value, ibig sabihin, i-a-add yung M(1,000) sa C(100) = 1,000+100=1,100

WORD PROBLEMS INVOLVING MEAN, MEDIAN, MODE & RANGE

MEAN  
It refers to the average of the values of the given set of numbers.  
Sa pag-so-solve ng mean, kailangan natin i-add lahat ng values ng numbers tapos i-di-divide natin sa dami ng given numbers. Ex. 1, 2, 3, 4, 5 = 1+2+3+4+5 = (5 lang po lahat ng numbers) = 15÷5 = 3 √

Sa pag-so-solve ng mean, kailangan natin i-multiply yung average sa dami ng given numbers. Ex. 90 X 6 = 540 tapos i-le-less po natin depende sa kung ano pa yung tinatanong.

1) Find the Arithmetic Mean of the ff. numbers: 10, 25, 35, 60, 95, 155  
SOLUTION:  
Arithmetic Mean = (Sum of the items) ÷ (Number of times)  
Arithmetic Mean = (10+25+35+60+95+155) ÷ 6 = 380÷6 = 63.33 √

2) Find the Arithmetic Mean of the ff. numbers: 8, -2, 9, 13, 17, 12  
SOLUTION:  
Arithmetic Mean = (Sum of the items) ÷ (Number of items)  
Arithmetic Mean = (8+(-2)+9+6+13+17+12) ÷ 7 = (8+9+6+13+17+12)+(-2) ÷ 7 = (65)+(-2) ÷ 7 = 65-2 ÷ 7 = 63÷7 = 9 √

3) The average of 6 numbers is 36. If the average of 4 numbers is 32, what is the average of 2 numbers?  
SOLUTION:  
Ave. of 6 nos. = 36 = 6 X 36 = 216  
Ave. of 4 nos. = 32 = 4 X 32 = 128  
Ave. of 2 nos. = (Ave. of 6 nos. less Ave. of 4 nos.)  
Ave. of 2 nos. = 216 - 128 = 88 ÷ 2 = 44 √

4) The average of 6 numbers is 36. If the average of 3 numbers is 36, what is the average of the remaining 3 numbers?  
SOLUTION:  
Ave. of 6 nos. = 36 = 6 X 36 = 216  
Ave. of 3 nos. = 36 = 3 X 36 = 108  
Ave. of 3 nos. = (Ave. of 6 nos. less Ave. of 3 nos.)  
Ave. of 3 nos. = 216 - 108 = 108 ÷ 3 = 36 √

5) The mean of 11 items is 17.5. If an observation 15 is deleted, find the mean of the remaining data.  
SOLUTION:  
Arithmetic Mean = (Sum of the items) ÷ (Number of items)  
17.5 = Sum of the items ÷ 11  
Sum of the items = 17.5 X 11 = 192.5  
(If one item 15 is deleted from 11 items, then the total number of items = 10)  
Sum of the items = 192.5 - 15 = 177.5  
Arithmetic Mean = 177.5÷10 =17.75 √

6) What must have been the average score of Kim in her first three tests so that her average score in the four tests was 86 when she scored 95 in her fourth test?  
SOLUTION:  
Ave. score in 4 tests = 86  
Score in her 4th test = 95  
Ave. score in her first 3 tests = ?  
(4 X 86) - 95 = 344-95 = 249÷3 = 83 √

7) Kate scored 97, 93, 92 in her first three tests. What must she get in her fourth test so that her average score in the four tests will be 95?  
SOLUTION:  
Scores in the first 3 tests = 97, 93, 92 = (97+93+92) = 282  
Average score in the 4 tests = 95  
Score in her 4th test  
(4 X 95) - 282 = 380-282 = 98 √

MEDIAN  
It refers to the middle number/value in a given set of numbers.  
Sa pag-so-solve ng median, kailangan po natin i-arrange yung mga numbers simula sa pinakamababang value hanggang sa pinakamataas na value at kukunin po natin yung middle number sa given set of numbers. Ex. 2, 6, 4, 10, 8 = 2, 4, 6, 8, 10 = 6 √

Sa pag-so-solve ng median, kapag dalawang number po yung nasa "middle", kailangan po natin sila i-add at i-divide sa 2 at yun po yung nasa "middle" ng given set of numbers. Ex. 12, 6, 2, 4, 10, 8 = 2, 4, 6, 8, 10, 12 = 6+8 = 14÷2 = 7 √

8) Find the median of the ff. observations: 17, 31, 12, 27, 15, 19, 23.  
SOLUTION:  
12, 15, 17, 19, 23, 27, 31 = 19 √

9) Find the median of the ff. observations: 23, 37, 65, 89, 6, 29, 44, 67  
SOLUTION:  
6, 23, 29, 37, 44, 65, 67, 89 = 37+44 = 81÷2 = 40.5 √

10) Find the median of the ff. numbers: 1.23, -1,23, 0.123, -123  
SOLUTION:  
-123, -1.23, 0.123, 1.23 = (-1.23)+(0.123) = -1.107 ÷ 2 = -0.5535

MODE  
It refers to the number(s)/value most frequently appeared in a given set of numbers. (Number(s)/po na pinakamaraming beses po na nag-appear). I-a-arrange rin po natin yung mga numbers simula sa pinakamababang value hanggang sa pinakamataas na value para makuha o mas madaling makuha yung mode. Ex. 1, 5, 9, 3, 7, 9 = 1, 3, 5, 7, 9, 9 =9 √

Kapag walang number po na mas maraming beses na nag-appear, ibig sabihin po walang Mode. Ex. 1, 5, 7, 3, 9 = 1, 3, 5, 7, 9 = No Mode √

Kapag 2 po yung pinakamaraming beses na nag-appear, ibig sabihin po 2 yung mode. Ex. 1, 5, 1, 3, 5, 7 = 1, 1, 3, 5, 5, 7 = 1 & 5 √

Kapag 3 po yung pinakamaraming beses na nag-appear, ibig sabihin po 3 yung mode. Ex. 3, 7, 1, 7, 3, 1, 5, 9 = 1, 1, 3, 3, 5, 7, 7, 9 = 1, 3, & 7 √

11) Find the mode of the ff. observations: 17, 6, 19, 14, 8, 6, 13, 25, 6, 16.  
SOLUTION:  
6, 6, 6, 8, 13, 14, 16, 17, 19, 25 = 6 √

12) Find the mode of the ff. observations: 28, 14, 42, 27, 25, 31, 28, 31, 45.  
SOLUTION:  
14, 25, 27, 28, 28, 31, 31, 42, 45 = 28 & 31 √

13) Find the mode of the ff. observations: 33, 23, 13, 43, 3, 53.  
SOLUTION:  
3, 13, 23, 33, 43, 53 = No Mode √

RANGE  
In a data, it refers to the difference between the maximum score & the minimum score. Ex. 7, 3, 5, 6, 4 = 7-3 = 4 √

14) Find the range of the items: 13, 18, 16, 14, 19, 17.  
SOLUTION:  
19-13 = 6 √

15) Find the range of the items: 4, 6, 8, 10, 12, 5, 3, 7, 9, 11.  
SOLUTION:  
12-3 = 9 √

PEMDAS/MDAS (Parenthesis, Exponent, Multiplication, Division, Addition, Subtraction)

P-arenthesis ( )  
Kung may ganito po sa equation, una po muna natin i-so-solve yung nasa loob nito. Uunahin po natin yung multiplication o division. Kahit po ano pa ang mauna sa kanilang dalawa. Sunod po yung addition o subtraction. Kahit ano po yung mauna sa kanilang dalawa.

E-xponent ^  
Pangalawa po sa i-so-solve kapag may parenthesis po sa equation, pero pag wala po una po natin i-so-solve yung number(s) na may exponent.

M-ultiplication (\* or X) & D-ivision (÷ or /)  
Pangatlo po natin i-so-solve kung may parenthesis at exponent sa equation. Una po natin i-so-solve sa may number(s) kapag walang parenthesis at exponent sa equation. Uunahin po natin sa kanilang dalawa kung ano mauuna sa equation.

A-ddition (+) & S-ubtraction (-)  
Pang-apat po na i-so-solve kapag may parenthesis, exponent, multiplication o division. Pangalawa po kapag walang parenthesis at exponent. Una po kapag walang parenthesis, exponent, multiplication o division. Uunahin po natin sa kanilang dalawa kung ano mauuna sa equation.

\*PARENTHESIS & EXPONENT\*  
\*Kahit ano po na POSITIVE integer/number na HINDI nakapaloob sa PARENTHESIS na i-re-raised sa kahit ilang power ay LAGING POSITIVE.  
Ex.  
2^2= 4  
3^3= 27  
4^4= 256  
\*Kahit ano po na NEGATIVE integer/number na HINDI nakapaloob sa PARENTHESIS na i-re-raised po sa kahit ilang power ay LAGING NEGATIVE ang sign.  
Ex.   
-2^2= -4  
-3^3= -27  
-4^4= -256  
\*Kahit ano po na POSITIVE integer/number na NAKAPALOOB sa PARENTHESIS sa kung ilang beses i-re-raised yung power ay LAGING POSITIVE ang sign.  
Ex.  
(2)^2= 4  
(3)^3= 27  
(4)^4= 256  
\*Naka-depende po kung positive o negative yung sign ng isang NEGATIVE integer/number na NAKAPALOOB sa PARENTHESIS sa kung ilang beses i-re-raised yung power. Kapag po raised to an odd number (3rd, 5th, 7th, 9th power & so on, NEGATIVE po yung sign). Kapag po raised to an even number (2nd, 4th, 6th, 8th, 10th power & so on, POSITIVE po yung sign).  
Ex.  
(-2)^2= 4  
(-3)^3= -27  
(-4)^4= 256

NOTE:  
\* means times/multiplied by (multiplication)  
^ means raised to the power of/raised to the nth power (exponent)  
1) 4\*5÷2+3-6  
SOLUTION:  
20÷2+3-6  
10+3-6  
13-6  
7 √

2) (19+5)÷2^3-6  
SOLUTION:  
24÷2^3-6 (NOTE: 2^3=2\*2\*2=8)  
24÷8-6  
3-6  
-3 √

3) 3-5\*2+12÷4  
SOLUTION:  
3-10+3  
-7+3  
-4 √

4) 3+5^2-6÷2  
SOLUTION:  
3+25-6÷2 (NOTE: 5^2=5\*5=25)  
3+25-3  
28-3  
25 √

5) 3^2-(5+4)÷1  
SOLUTION:  
3^2-9÷1 (NOTE: 3^2=3\*3=9)  
9-9÷1  
9-9  
0 √

6) 9÷3+4\*3÷2  
SOLUTION:  
3+12÷2  
3+6  
9 √

7) 3+20÷5\*4-(3+5)  
SOLUTION:  
3+20÷5\*4-8  
3+4\*4-8  
3+16-8  
19-8  
11 √

8) 4-5\*4+2^2÷2  
SOLUTION:  
4-5\*4+4÷2 (NOTE: 2^2=2\*2=4)  
4-20+2  
-16+2  
-14 √

9) 3\*5+(3-5)÷2  
SOLUTION:  
3\*5+(-2)÷2  
3\*5-2÷2  
15-1  
14 √

10) 15-8÷2^2+(3^2)-2  
SOLUTION:  
15-8÷2^2+9-2  
15-8÷4+9-2  
15-2+9-2  
13+7  
20 √

11) 8÷4\*7+4-3^2+4  
SOLUTION:  
8÷4\*7+4-9+4  
2\*7+4-9+4  
14+4-9+4  
18-5  
13 √

12) (18÷3)+4^2\*4÷2+4  
SOLUTION:  
6+16\*4÷2+4 (NOTE: 4^2=4\*4=16)  
6+64÷2+4  
6+32+4  
42 √

13) 5\*2+4-4^2÷4  
SOLUTION:  
5\*2+4-16÷4  
10+4-4  
14-4  
10 √

14) 20-5\*4+20÷5-4  
SOLUTION:  
20-20+4-4  
0+0  
0 √

15) 3+4\*5+(5-3)÷2  
SOLUTION:  
3+4\*5+2÷2  
3+20+1  
24 √

NUMBERS  
WHOLE NUMBERS - 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, and so on.

1) 2, 5, 11, 20, \_\_\_  
SOLUTION:  
2, (+3) 5, (+6) 11, (+9) 20, (+12) 32 √

2) 60, 30, 20, 15, 12, \_\_\_  
SOLUTION:  
60÷1=60  
60÷2=30  
60÷3=20  
60÷4=15  
60÷5=12  
60÷6=10 √

3) 4, 8, 32, 192, \_\_\_  
SOLUTION:  
4, (X 2) 8, (X 4) 32, (X 6) 192, (X 8) 1536 √

4) 5, 15, 75, 525, \_\_\_  
SOLUTION:  
5, (X 3) 15, (X 5) 75, (X 7) 525, (X 9) 4725 √

5) 4, 16, 36, 64, \_\_\_  
SOLUTION:  
2 X 2 = 4  
4 X 4 = 16  
6 X 6 = 36  
8 X 8 = 64  
10 X 10 = 100 √

6) 1, 9, 25, 49, \_\_\_  
SOLUTION:  
1 X 1 = 1  
3 X 3 = 9  
5 X 5 = 25  
7 X 7 = 49  
9 X 9 = 81 √

7) 1, 16, 81, 256, \_\_\_  
SOLUTION:  
1 X 1 X 1 X 1 = 1  
2 X 2 X 2 X 2 = 16  
3 X 3 X 3 X 3 = 81  
4 X 4 X 4 X 4 = 256  
5 X 5 X 5 X 5 = 625 √

8) 31, 59, 21, 87, 115, 21, \_\_\_, \_\_\_  
SOLUTION:  
Number 21 was repeated.  
31, (+28) 59, (+28) 87, (+28) 115, (+28) 143, (+28) 171  
143, 171 √

COUNTING NUMBERS - 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, and so on.

EVEN NUMBERS - 0, 2, 4, 6, 8, 10, and so on.

ODD NUMBERS - 1, 3, 5, 7, 9, and so on.

PRIME & COMPOSITE NUMBERS  
NOTE: The number 1 is neither prime nor composite because it only has one positive factor, which is itself.  
PRIME NUMBER - a number which has exactly two factors; itself and one.  
Ex. 2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73, 79, 83, 89, 97, 101, 103, 107, 109, 113, and so on.

COMPOSITE NUMBER - a number which can be represented by the product of two positive integers, neither of which can be itself.  
Ex. 4, 6, 8, 9, 10, 12, 14, 15, 16, 18, 20, and all the numbers that have not be mentioned to be composite numbers up until 113, but there are a lot of composite numbers after 113.

POSITIVE & NEGATIVE INTEGERS  
9) 6-18 = -12 √  
10) -6-18 = -24 √  
11) -6+18 = 12 √  
12) 6-(-18) = 6+18 = 24 √  
13) -6-(-18) = -6+18 = 12 √  
14) 6 X 18 = 108 √  
15) 6 X -18 = -108 √  
16) -6 X 18 = -108 √  
17) -6 X -18 = 108 √  
18) 18 ÷ 6 = 3 √  
19) 18 ÷ -6 = -3 √  
20) -18 ÷ 6 = -3 √  
21) -18 ÷ -6 = 3 √

\*ADDITION OF INTEGERS\*  
\*An integer with no sign means a positive(+) integer\*  
Positive(+) plus Positive(+) equals Positive(+)  
Ex. 1+2=3  
Positive(+) plus Negative(-) equals Positive(+) or Negative(-) depending on the sign of the higher number of the given integers  
Ex. 1-2 = -1 (2 is the higher number with a negative sign, so the sign must be negative)  
Ex. 3-2 = 1 (3 is the higher number with a positive sign, so the sign must be positive)  
Negative(-) plus Negative(-) equals Negative(-)  
Ex. (-1)+(-2)= -3 \*NOTE(-1)+(-2) is the same as -1-2 = +(-) = -  
Negative(-) plus positive(+) equals Positive(+) or Negative(-) depending on the sign of the higher number of the given integers  
Ex. -2+1=-1 (2 is the higher number with a negative sign, so the sign must be negative)  
Ex. -2+3= 1 (3 is the higher number with a positive sign, so the sign must be positive)

\*SUBTRACTION OF INTEGERS\*  
Positive(+) minus Positive(+) equals Positive(+) or Negative(-) depending on the sign of the higher number of the given integers  
Ex. 2-1= 1 (2 is the higher number with a positive sign, so the sign must be positive)  
Ex. 2-3= -1 (3 is the higher number with a negative sign, so the sign must be negative)  
Positive(+) minus Negative(-) equals Positive(+)  
Ex. 2-(-1) = 2+1= 3 \*NOTE: -(-) = +   
Negative(-) minus Negative equals Positive(+) or Negative(-) depending on the sign of the higher number of the given integers  
Ex. (-2)-(-1) = -2+1= -1 (2 is the higher number with a negative sign, so the sign must be negative). -(-)= +  
Ex. (-5)-(-6) = -5+6 = 1 (6 is the higher number with a positive sign, so the sign must be positive)  
Negative(-) minus Positive(+) equals Negative (-) \*we have to copy the negative sign  
Ex. -2-1 = -3   
Ex. -2-3 = -5

\*MULTIPLICATION OF INTEGERS\*  
Like/Same signs = Positive(+)  
Unlike signs/Different/Not the same signs= Negative(-)  
Ex. 1 \* 2 = 2 (1 & 2 possess both positive signs) (\* means times) {1\*2 is the same as (1)(2) & 1 X 2}(Positive times Positive equals Positive, that is like signs which need a positive sign)  
Ex. 1 \* -2 (1 with a positive sign & 2 with a negative sign) (Positive times Negative equals Negative, that is unlike signs which need a negative sign)  
Ex. -1 \* -2 (1 with a negative sign & 2 with a negative sign) (Negative times Negative equals Positive, that is like signs which need a Positive sign)  
Ex. -1 \* 2 (1 with a negative sign & 2 with a positive sign) (Negative times Positive equals Negative, that is unlike signs which need a Negative sign)

\*DIVISION OF INTEGERS\*  
\*SAME RULES IN MULTIPLICATION OF INTEGERS MUST BE APPLIED IN DIVISION OF INTEGERS\*  
Ex. 2 ÷ 1 = 1(Like signs= Positive sign)  
Ex. 2 ÷ -1 = -1(Unlike signs= Negative sign)  
Ex. -2 ÷ -1 = 1(Like signs= Positive sign)  
Ex. -2 ÷ 1 = -1(Unlike signs= Negative sign)

PLACE VALUE (whole numbers)  
123,456,789  
1 - hundred millions  
2 - ten millions  
3 - millions  
4 - hundred thousands  
5 - ten thousands  
6 - thousands  
7 - hundreds  
8 - tens  
9 - ones

PLACE VALUE (in decimal form)  
12,345.6789  
1 - ten thousands  
2 - thousands  
3 - hundreds  
4 - tens  
5 - ones  
. - decimal point  
6 - tenths  
7 - hundredths  
8 - thousandths  
9 - ten thousandths

ROUNDING OFF NUMBERS  
Kung ang number po sa right side ay:  
1) 0-4 (i-re-retain lang po natin yung number sa left side tapos mag-a-add po tayo ng zero o zeros)  
2) 5-9 (mag-a-add po tayo ng 1 sa number sa left side tapos mag-a-add po tayo ng zero o zeros)

Round off 123,456,789 to the nearest:  
22) tens (8 is the tens digit) = 123,456,790 √  
23) hundreds (7 is the hundreds digit) = 123,456,800 √  
24) thousands = (6 is the thousands digit) = 123,457,000 √  
25) ten thousands = (5 is the ten thousands digit) = 123,460,000 √  
26) hundred thousands = (4 is the hundred thousands digit) = 123,500,000 √  
27) millions = (3 is the millions digit) = 123,000,000 √  
28) ten millions = (2 is the ten millions digit) = 120,000,000 √

Round off 2,345.6789 to the nearest:  
29) thousands (2 is the thousands digit) = 2,000 √  
30) hundreds (3 is the hundreds digit) = 2,300 √  
31) tens (4 is the tens digit) = 2,350 √  
32) whole number (ones/units) = (5 is the ones digit) = 2,346 √  
33) tenths (6 is the tenths digit) = 2,345.7 √  
34) hundredths (7 is the hundredths digit) = 2,345.68 √   
35) thousandths (8 is the thousandths digit) = 2,345.679 √

Get the average....   
:; 45, 56, 78, 35, 23, -2

Sorry my negative two(2) po pla... 

45+56+78+35+23+(-2)   
237+(-2)  
237-2  
235÷6  
39.17

"LESS THAN"

Dahil sa linshak na less than na yan, I questioned myself kung tama ba talaga yung pagkakaintindi ko. At ito na mga bes, nag further research na ako! Hahahaha. Tama naman ako so far. (base sa research ko tama ako haha)

5 is less than x means 5 < x

5 less than x means x - 5

5 less x means 5 - x

Someone asked me if ano ang interpretation ng "9 less than 5", is it 9-5 or 5-9? Ang sagot ko is 5-9 kasi pag gamit mo less than, you'll subtract the 9 from something. And base na rin sa naresearch ko, yung ang tama. So "25 less than 50" , ang interpretation ko is 50-25. Pero yung sa kanya is opposite nung sagot ko. Ano po ba talaga? Nagtatanong lang just to clarifyhttps://www.facebook.com/images/emoji.php/v9/f4c/1/16/1f642.png:) Nalilito na rin ako. Hahahaha

The original price of a book was Php 125.00. What was the rate of discount after paying Php 100.00?  
With solution po = 100÷125=0.80=80%=100%-80%=20%