MATH REVIEWER

QUESTIONS	SOLUTIONS/YOUTUBE LINK
1) Which statement is true? a. $\sqrt{5}$ is a rational number. b. 0 is a positive number c. $\sqrt{3}$ is a real number d. $\sqrt{4}$ is an irrational number	YT LINK FOR 1-10 https://youtu.be/Pa8Yc1Ot6NQ a. False, because it is irrational number b. False, 0 has no sign c. True, any number in a number line is a real number d. False, because it is rational number
2) Ten thousandths digit of the number 901,234.5678 is __? a. 1 b. 7 c. 9 d. 8	Digits after the decimal point in order. Tenths, hundredths, thousandths, ten thousandths,… Ten thousandths digit = 8
3) The greatest common divisor of 91, 39 and 78 is ___. a. 24 b. 13 c. 39 d. 91	91 = 13(7) 39 = 13(3) 78 = 13(6) GCD = 13
4) Which is a proportion? a. 5:4 = 15:12 b. 8:3 = 16:9 c. 4:5 = 12:10 d. ½:7 = 5:2	Proportion if the product of extremes equals the product of means. 5(12) = 4(15) 60 = 60 Ca. A
5) After receiving 30% discount, Jay paid P210.00 for an item. What is the regular price of the item? a. P300 b. P350 c. P380 d. P400	Discounted price = regular price – discount DP = RP – D 210 = RP – 0.30(RP) 210 = 0.70(RP) 210/0.70 = RP 300 = RP
6) 1/8 in percent is ___? a. 10.5% b. 12.5% c. 14.5% d. 16.5%	Divide 1 by 8, we will get 0.125 = 12.5%
7) Peter borrowed P15,000 from the bank at the rate of 12% per year. How much will he owe the bank after 1.5 years? a. P16,000 b. P17,000 c. P16.70 d. P17,700	F= P(1+rt) P = P15,000, r = 12% = 0.12, t = 1.5 F = 15,000[1+0.12(1.5)] F = P17,700
8) The number of hours spent for review in Algebra, Chemistry and English is in the ratio 4:3:1. How many hours does each student spend for Chemistry in a 24-hour review package? a. 3 b. 6 c. 9 d. 12	Algebra:Chemistry:English = 4:3:1 Total = 24 hours 4x + 3x + x = 24 8x = 24 X=24/8 X=3 Chemistry = 3x = 3(3) = 9

9) At 70kph, Robin can reach his home within 50 minutes. At what rate should he drive his car so that he can reach home 15 minutes earlier? a. 60kph b. 80kph c. 90 kph d. 100 kph	Distance = Rate x Time Use inverse variation. 70(50) = 35x 3500 = 35x 3500/35 = x 100 = x
10) A typist can finish 4 pages in 6 minutes, how long will it take for him to finish 10 pages? a. 20 minutes b. 15 minutes c. 10 minutes d. 8 minutes	Use direct variation 4:6 = 10:x 4x = 6(10) 4x = 60 X = 60/4 X = 15
11) At 70kph, Robin can reach his home within 50 minutes. At what rate should he drive his car so that he can reach home 15 minutes earlier? a. 60kph b. 80kph c. 90 kph d. 100 kph	YT LINK FOR 11-20 https://youtu.be/CQCs_bgaRwg Distance = Rate x Time Use inverse variation. 70(50) = 35x 3500 = 35x 3500/35 = x 100 = x
12) Julius has P15,000 in the bank. After a year, he expects it to earn P750. What is the rate of interest? a. 2% b. 4% c. 5% d. 6%	I = Prt P = P15,000 , t = 1 year , I = 750, r=? 750 = 15,000(r)(1) 750 = 15,000r 750/15,000 = r 0.05 = r 5% = r
13) John invested P5,000 in a certain business. How much will his money be in 2 years if it earns 12% interest in a year? a. P6,000 b. P6,200 c. P6,100 d. P6,300	F = P[1 + rt] P = P5,000 , t = 2 years , r = 12% = 0.12 F = 5,000[1+0.12(2)] F = P6,200
14) What is the value of 3.5 kilograms in grams? a. 35 b. 350 c. 3,500 d. 35,000	1 kg = 1000 grams 3.5 kg = 3.5 x1000 = 3,500 grams
15) The least common multiple of 18 and 24 is ___. a. 6 b. 24 c. 36 d. 72	18 = 2(3)(3) 24 = 2(2)(2)(3) LCM = 2(2)(2)(3)(3) = 72
16) How many pieces of 7 ½ inches wire can be cut from a 31 ¼ ft roll of wire? a. 5 b. 10 c. 25	Convert 31 ¼ ft to inches 1 ft = 12 inches 31.25 x 12 = 375 inches 375 inches / 7.5 inches =50

d. 50	
17) A TV set that originally cost P20,000 is now sold at P18,000. What is the percentage decrease in the price of the TV set? a. 10% b. 20% c. 30% d. 40%	%decrease = (old price – new price)/old price = (20,000 – 18,000) / 20,000 = 2,000 / 20,000 = 0.10 = 10%
18) Four people can finish painting a room within 4 hours. If only 2 people are available, how many hours do they have to work to finish the same job? a. 4 b. 6 c. 8 d. 10	Use inverse variation 4(4) = 2x 16 = 2x 16/2 = x 8 = x
19) (3√8)(3√18) = ____ a. 108 b. 110 c. 112 d. 114	(3√8)(3√18) =3√(4)(2) x 3√(9)(2) = 3(2) √2 x 3(3) √2 =6√2 x 9√2 =54(2) =108
20) A salesman gets 15% commission for the first P20,000 and 10% for the amount over P20,000 of his total sales. How much does he get for a total sale of P50,600? a. P5,060 b. P6,060 c. P7,060 d. P8,060	Commission = 0.15 x 20,000 = 3,000 Additional = 0.10x(50,600 – 20,000) = 0.10 x 30,600 = 3,060 Total = 3,000 + 3,030 = 6,060
21) 72 is 3/4 of what number? a. 76 b. 84 c. 86 d. 96	YT LINK FOR 21-30 https://youtu.be/EcF1QLgvYfQ $72 = \frac{3}{4}x$ 4(72) = 3x 288 = 3x 288/3 = x 96 = x
22) 0.0125 expressed in fraction in lowest term is ____. a. 1/8 b. 1/4 c. 1/800 d. 1/80	$\frac{125}{10000}$ $= \frac{125 \div 125}{10{,}000 \div 125}$ $= \frac{1}{80}$
23) How many centimeters are there in 100 millimeters? a. 0.1 b. 1 c. 10 d. 100	1 cm = 10 mm 10 cm = 100 mm

24) How many times will a digit of 7 appear between 1 to 100? a. 9 b. 11 c. 19 d. 20	7, 17, 27, 37, 47, 57, 67, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 87, 97 20 times
25) What is the value of a in the statement: 3ab = 30, if b = 5? a. 2 b. 4 c. 6 d. 1	3ab = 30 3a(5) = 30 15a = 30 a = 30/15 a = 2
26) What is the single equivalent discount rate of the discount series 5%, 10% and 25%? a. 40% b. 35.9% c. 64.% d. 60%	(1-0.05)(1-0.1)(1-0.25) =(0.95)(0.9)(0.75) = 0.641 1-0.641 = 0.359 =35.9%
27) Lito cut 4 1/4 yard of plastic cover from a bolt containing 35 1/8 yard. How many yards were left in the bolt a. 31 ¼ b. 30 7/8 c. 31 1/8 d. 30 1/4	$35\frac{1}{8} - 4\frac{1}{4}$ $= 35\frac{1}{8} - 4\frac{2}{8}$ $= 34\frac{9}{8} - 4\frac{2}{8}$ $= 30\frac{7}{8}$
28) A ball is drawn at random from a box containing 3 red balls, 4 white balls and 5 blue balls. What is the probability that is not blue? a. 1/4 b. 7/12 c. 1/2 d. 5/12	Total = 12 Blue = 5 Not blue = 7 P(not blue) = 7/12
29) Rachelle bought 5 kilos of rice worth P200 and another 4 kilos of rice worth P144. What is the average price of rice per kilo? a. P172 b. P172.11 c. P175 d. P175.11	$ave = \frac{\sum x}{n}$ $ave = \frac{5(200) + 4(144)}{9}$ $ave = \frac{1576}{9}$ ave = 175.11
30) Jack and Jill work as a part of the service crew in one of the fast food chains. If their earnings are in the ratio of 7:8 respectively, how much did Jack earned when Jill had earned P6,400? a. P6200 b. P5600 c. P5800 d. P6080	7:8 = n:6400 8n = 7(6400) n = (7)(6400)/8 n = 7(800) n = 5600
31) The product of two whole numbers is 36, and their ratio is 1:4. Which of these is the smaller number? a. 3 b. 4 c. 8 d. 9	YT LINK FOR 31-40 https://youtu.be/sqK26fbhgy8 Let x be the first number 36/x = 2nd number X:36/x = 1:4 4x = 36/x (1)

	4x = 36/x $4x^2 = 36$ $x^2 = 36/4$ $x^2 = 9$ $x = 3$
32) If 30% of x is 60, what is 50% of x? a. 30 b. 50 c. 60 d. 100	0.30x = 60 X = 60/0.3 X = 200 0.50 x 200 = 100
33) A meter was cut at the 35-cm mark. What is the ratio of the smaller piece to the larger piece? a. 7:13 b. 65:35 c. 35:100 d. 65:100	Smaller = 35 Larger = 100 – 35 = 65 Ratio = 35:65 = 7:13
34) The carat is a unit measure used to weigh precious stones. It equals 3.086 grains. How many grains does a 2.8 carat diamond weigh? a. 864.08 b. 86.408 c. 8.6408 d. 8640.8	1 carat = 3.086 grains 2.8 carat x 3.086 = 8.6408 grains
35) 4 1/5 + 3 2/7 = _____ a. 7 3/12 b. 7 17/35 c. 7 1/35 d. 7 3/35	$4\frac{1}{5} + 3\frac{2}{7}$ $= 4\frac{7}{35} + 3\frac{10}{35}$ $= 7\frac{17}{35}$
36) Which is the sum of the infinite progression 3/2, 1, 2/3, 4/9,...? a. 4 ½ b. 5 ½ c. 6 ½ d. 7 1/2	Geometric series with r = 2/3 $S_n = \frac{a_1}{1-r}$ $S_n = \frac{\frac{3}{2}}{1-\frac{2}{3}}$ $S_n = \frac{\frac{3}{2}}{\frac{1}{3}}$ $S_n = \frac{3}{2}\ x\ \frac{3}{1}$ $S_n = \frac{9}{2}$ $S_n = 4\frac{1}{2}$
37) The value of the car depreciated by P20,000. It is worth P380,000. By how many percent did the value of the car decrease? a. 5% b. 10% c. 15% d. 20%	Depreciation = 20,000 Worth now = 380,000 Original price = 20,000 + 380,000 = 400,000 % decrease = decrease / original price = 20,000 / 400,000

	= 0.05 = 5%
38) Cady takes 3/4 hour to dress and get ready for school. It takes 4/5 hour to reach the school. If her class starts promptly at 8:00am; what is the latest time she can jump out of bed in order not to be late? a. 6:27 b. 6:42 c. 6:57 d. 7:02	3/4 + 4/5 = (15 + 16)/20 = 31/20 = 1 11/20 Convert to minutes 11/20 hr x 60min/1hr = 33 mins 8:00 -1:33 6:27
39) How much greater is the sum of the first 100 counting numbers to the sum of the first 50 counting numbers? a. 110 b. 1200 c. 3155 d. 3775	$S_n = n/2(a_1 + a_n)$ $S_{50} = 50/2(1 + 50)$ $S_{50} = 25(51) = 1275$ $S_{100} = 100/2(1 + 100)$ $S_{100} = 50(101) = 5,050$ 5050 – 1275 = 3775
40) Lyka and Avery do a job together in three hours. Working alone, Lyka does the job in 5 hours. How long will it take Avery to do the job alone? a. 3 1/3 hrs b. 2 1/3 hrs c. 3 hrs d. 7 1/2 hrs	1/L + 1/A = 1/T Together = 3 , Lyka = 5, Avery = ? 1/5 + 1/A = 1/3 15A(1/5 + 1/A) = 1/3(15A) 3A + 15 = 5A 15 = 5A – 3A 15 = 2A 15/2 = A 7 ½ = A
41) If P75.00 is shared among three children in the ratio 3:7:15. The amount of the smallest share is ____. a. P9.00 b. P15.00 c. P25.00 d. P35.00	YT LINK FOR 41-50 https://youtu.be/9Rk68rqLx1c 3x + 7x + 15x = 75 25x = 75 X = 75/25 X = 3 Smallest share = 3x = 3(3) = 9
42) A politician wants to get his message to 3/4 of the population of 48,000 in Bulacan. However, his advertising campaign reaches only 4/5 of the number he intended. How many people does he actually reach? a. 16,000 b. 24,500 c. 28,800 d. 36,000	(3/4)48,000 = 36,000 (4/5)36,000 =28,800
43) Four mangoes cot P85.00. At that price what will be 2 1/2 dozen mangoes cost? a. P510.00 b. P630.00 c. P637.50	1 dozen = 12pcs 2 ½ dozen = 30 pcs 4:85 = 30:x 4x = 30(85)

d. P712.50	4x = 2,550 X = 2550/4 X = 637.50
44) A movie ticket costs P500 during a premiere night, and P320 during the regular show. What is the percentage decrease in the price of the ticket? a. 24% b. 28% c. 30% d. 36%	% decrease = decrease / premiere night cost = (500 – 320) / 500 = 180 / 500 = 0.36 = 36%
45) What is the exact interest of P15,000, invested at 5.5% simple interest rate for 108 days? a. P247.50 b. P245.00 c. P243.17 d. P244.11	I = Prt P = P15,000, r = 5.5% = 0.055 , t = 108/365 yr I = 15,000(0.055)(108/365) I = P244.11
46) At what rate of interest should P2,400 be invested so that it will earn P80.00 in 8 months? a. 4.5% b. 5% c. 5.5% d. 6%	I = Prt P = P2,400 , I = P80 , t = 8/12 yr 80 = 2,400(r)(8/12) 12(80) = 8(2400)r 960 = 19,200r 960/19,200 = r 0.05 = r 5% = r
47) A water tank contains 18 liters when it is 20% full. How many liters does it contain when 50% full? a. 30 b. 45 c. 55 d. 60	18: 20% = x:50% 18:20 = x:50 20x = 18(50) 20x = 900 X = 900/20 X = 45
48) The vertex angle of an isosceles triangle is 20°. What is the measure of one of the base angles? a. 60° b. 75° c. 80° d. 160°	A + B + C = 180 20 + x + x = 180 20 + 2x = 180 2x = 180 – 20 2x = 160 X = 160/2 X = 80
49) The area of a rectangle is $x^2 + 2x – 8$. If its length is x + 4, what is its perimeter? a. x – 2 b. 2x + 3 c. 3x + 2 d. 4x + 4	$A = x^2 + 2x – 8$ L = x + 4 A = LW $x^2 + 2x – 8 = (x+4)(W)$ (x+4)(x-2) = (x+4)W X – 2 = W P = 2L + 2W P = 2(x+4) + 2(x-2) P = 2x + 8 +2x – 4 P = 4x + 4

50) The average of 5 different counting numbers is 20. What is the highest possible value that one of the numbers can have? a. 60 b. 70 c. 80 d. 90	Ave = (sum of X)/n 20 = (sum of X)/5 100 = (sum of X) Highest possible value when the numbers are 1,2,3 and 4 100 = 1+2+3+4+X 100 = 10 + X 90 = X
51) Number series: 100%, 2, 15/5, 4, ___. a. 2 b. 3 c. 4 d. 5	YT LINK for 51-60 https://youtu.be/vAPGaDdo1AU Simplify the numbers 1, 2, 3, 4, ___ Next number is 5
52) Number series: 0.1, 30%, ½, 0.7, 90% , ___. a. 1 1/10 b. 100% c. 7/9 d. 1.5	Simplify the numbers, convert to decimal 0.1, 0.3, 0.7, 0.9, ___ Common difference is 0.2 The next number is 1.1 1 1/10 = 1.1
23) What is the difference between $\sqrt{150}$ and $\sqrt{54}$? a. $\sqrt{6}$ b. $2\sqrt{6}$ c. $3\sqrt{6}$ d. $5\sqrt{6}$	$\sqrt{150} - \sqrt{54}$ $= \sqrt{25(6)} - \sqrt{9(6)}$ $= 5\sqrt{6} - 3\sqrt{6}$ $= 2\sqrt{6}$
54) $100^0 + (-4^2) - 2^2$ = ? a. -19 b. 13 c. 19 d. 21	$100^0 + (-4^2) - 2^2$ = 1 + (-16) – 4 = 1 – 16 -4 = -19
55) The mean, median and mode of 5 numbers are equal. The numbers are 29, 18, 24 and 25. What is the fifth number? a. 18 b. 24 c. 25 d. 29	When median, mean and mode are equal, the only possible answers will only be 24 and 25. Substitute both in the formula for mean. When fifth number = 24 Mean = (18+24+24+25+29)/5 Mean = 24 Thus, Mean = median = mode = 24
56) If 500 or 25% of graduating class are girls, how many are graduating? a. 2000 b. 3000 c. 5000 d. 10,000	Let x be the number of graduating 0.25x = 500 X = 500/0.25 X = 2000
57) If Mavi is feeding his buddy ½ cup of dog food but uses 1/10 of a cup, how many scoop will he need to feed his dog? a. 1/12 th scoop b. 1/10 th scoop c. 5 scoops d. 3 scoops	Let x be the number of scoops 1/10 (x) = ½ x/10 = ½ 2x = 10 X = 10/2 X = 5

58) John walks everyday from his house to the police station. After walking at a rate of 2 meters/second for 3 minutes, he looks at his watch and realizes that he has to run 4 meters/second for 1 minute so that he will not be late. What is the distance from his house to the police station? a. 10m b. 60m c. 105m d. 600m	Distance = Rate x Time $D = D_1 + D_2$ Walking: D_1 = 2m/s (3 min) = 2m/s (180 s) = 360m Running: D_2 = 4m/s (1 min) = 4m/s (60s) = 240 m Total distance = 360 + 240 = 600m
59) A chemist has 400 milliliters of a solution of 20% alcohol on hand, and he wants to mix it with enough pure alcohol to turn it into a 30% alcohol solution, how much pure alcohol will this require? a. 33 ml b. 50 ml c. 57 ml d. 60 ml	$C_1V_1 + C_2V_2 = CV$ Let x be the amount of pure alcohol. 400(20) + 100x = 30(400+x) 8000 + 100x = 12,000 + 30x 100x – 30x = 12,000 – 8,000 70x = 4,000 X = 4,000/70 X = 57
60) Kevin's father was 38 years of age when he was born while her mother was 36 years old when his brother four years younger to him was born. What is the difference between the ages of her parents? a. 2 years b. 4 years c. 6 years d. 8 years	When Kevin was born Kevin = 0, Father = 38 When brother was born Brother = 0, Mother = 36 Brother is 4 years younger, so Kevin = 4 and Father = 42 Difference of age of parents = 42 – 36 = 6
61) Number series: 0.5, 0.55, 0.65, 0.8, ___. a. 0.85 b. 0.9 c. 0.95 d. 1	YT LINK for 61-70 https://youtu.be/fwpKb33kt2g 0.5 + 0.05 = 0.55 0.55 + 0.10 = 0.65 0.65 + 0.15 = 0.8 0.8 + 0.20 = 1
62) Number series: 225, 336, 447, ___, 669, 7710 a. 338 b. 555 c. 558 d. 992	First 2 digits: 22, 33, 44, 55, 66, 77 Last digit: 5, 6, 7, 8, 9, 10 The missing number is 558.
63) The mean, median and mode of 9 numbers are equal. The numbers are 12, 22, 10, 15, 14, 11, 19, 17. What is the 9^{th} number? a. 11 b. 12 c. 14 d. 15	Arrange the numbers in increasing order. 10, 11, 12, 14, 15, 17, 19, 22 The only possible answers are 14 and 15. When 9th number = 15 Mean = (10+11+12+14+15+15+17+19+22)/9 Mean = 15 Thus, Mean = median = mode = 15
64) What is the sum of all odd numbers between 60 to 120? a. 2400 b. 2700 c. 3050 d. 4500	$S_n = n/2[2a1 + (n-1)d]$ $a_1 = 61$, $a_n = 120$, d = 2 solve first the value of n using the formula $an = a_1 + (n-1)d$ 119 = 61 + (n-1)2 119 = 61 + 2n – 2 119 = 59 + 2n

	60 = 2n 30 = n $S_n = n/2[2a_1 + (n-1)d]$ = 30/2[2(61) + 29(2)] = 15[122 + 58] = 15(180) = 2700
65) A race travelled for 2 ½ hours with an average speed of 132 5/8 kph. Find the total distance it covered. a. 264 5/16km b. 330 3/8km c. 331 9/16 km d. 335 7/8km	Distance = Rate x Time T = 2 ½ hours, R = 132 5/8, D = ? D = 2 ½ x 132 5/8 D = 5/2 x 1061/8 D = 5305/16 D = 331 9/16 km
66) If the price of a book is first decreased by 25% and then increased by 20%, then the net change in the price will be: a. 10% decrease b. 20% decrease c. 15% decrease d. 10% increase	Let the price of the book be 100. Decrease by 25%: 100 – 0.25(100) = 100 -25 = 75 Increase by 20%: 75 + 0.20(75) = 75 + 15 = 90 From original price of 100, it became 90. Decrease of 10%
67) A carpenter wanted three pieces of wood each 1 5/8 feet long. If he planned to cut them from a 6-foot piece of wood, how much of the piece would be left? a. 1 1/8 ft b. 3 ft c. 3 3/8 ft d. 4 7/8 ft	6 – 3(1 5/8) = 6 – 3(13/8) = 6 – 39/8 = 48/8 – 39/8 = 9/8 = 1 1/8 ft
68) Which is the equivalent common fraction of the repeating decimal 2.36363636…? a. 25/11 b. 26/11 c. 27/11 d. 28/11	Let x = 2.36363636… 100x = 236.363636… Subtract the two equations 100x = 236.363636… <u>-x = -2.36363636…</u> 99x = 234 X = 234/99, divide both by 9 X = 26/11
69) If a baseball player hits 10 home runs in the first 40 games, at the same rate how many home runs can he expect to hit during the 164-game season? a. 40 b. 41 c. 43 d. 44	10:40 = x:164 1:4 = x:164 4x = 164 X = 164/4 X = 41
70) How many ways can a committee of 4 people be selected from a group of 7 people? a. 35 b. 70 c. 140 d. 210	nCr = 7C4 = 7!/(7-4)!4! =7!/(3!4!) =(7x6x5x4!)/(4!x3x2x1) =(7x6x5)/(3x2x1) =7x5

	=35
71) Arianne decided to sell his 3-year old car at ₱800,000. if she bought it at ₱1,000,000, what is the rate of its depreciation? A. 35% B. 75% C. 2% D. 20% E. 80%	YT LINK for 71-80 https://youtu.be/ow6PsqqwLzI Rate of depreciation = decrease/original price = (1,000,000-800,000)/1,000,000 = 200,000/1,000,000 = 0.20 = 20%
72) If a Play Station 4 was bought for $558 after a 10% discount, what was the original price of the Play Station 4? A. $660 B. $700 C. $680 D. $550 E. $620	Original Price – discount = New Price OP – 0.10(OP) = 558 0.9(OP) = 558 OP = 558/0.9 OP = 620
73) The amount of paper recycled is directly proportional to the number of trees that recycling saves. If recycling 2,000 pounds of paper saves 17 trees, how many trees are saved when 5,000 pounds of paper are recycled? A. 63 B. 42.5 C. 35 D. 45.5 E. 45	2000:17 = 5000:n 2000n = 17(5000) n = (17)(5000)/2000 n = 85000/2000 n = 42.5
74) While covering a distance or 24 km, a man noticed that after walking for 1 hour and 40 minutes, the distance covered by him was 5/7 of the remaining distance. What was his speed in m/s? A. 1.33 B. 1.21 C. 1.55 D. 1.12 E. 1.67	Distance = Rate x Time D = 24 km Let x be the remaining distance Distance covered = 24-x = (5/7)x 7(24-x) = (5/7)x(7) 168 – 7x = 5x 168 = 5x + 7x 168 = 12x 168/12 = x 14 = x Now, find the speed R = D/T D = 24 – x = 24 – 14 = 10km Convert in meters: 10km = 10,000m T = 1 hr and 40 minutes Convert in seconds: 1 hr = 3600 seconds; 40 minutes = 40x60 = 2400 seconds T = 6000 seconds R = 10,000/6000 = 1.67 m/s
75) A coat was sold at a 30% discount sale for $140. What was the original price of the coat? A. $180 B. $230 C. $350	Original Price – Discount = New Price x – 0.30x = 140 0.7x = 140 X = 140/0.7 X = 200

D. $400 E. $200	
76) In the Philippines, 13 out of every 20 cans are recycled. What percent of cans are recycled? A. 75% B. 80% C. 40% D. 65% E. 55%	13/20 = 0.65 = 65%
77) What is the marked price of a pair of shoes which was discounted ₱350 at 35% discount? A. ₱1,000 B. ₱2,000 C. ₱3,500 D. ₱4,500 E. ₱3,000	Discount = Rate x Marked Price 350 = 0.35 x MP 350/0.35 = MP 1000 = MP
78) There are only 350,000 who voted which is just 20% of the registered voters. What is the total number of registered voters? A. 70,000 B. 95,000 C. 17,000 D. 1,750,000 E. 1,750	Let x be the number of registered voters 20% of x = 350,000 0.2x = 350,000 X = 350,000/0.2 X = 1,750,000
79) Presently, Fred is 4 times as old as Gary. In 10 years, Fred will be 3 times as old as Gary. How old (in years) will Fred be in 3 years? A. 50 B. 62 C. 83 D. 75 E. 35	Present / 10 years from now Fred: 4G / 4G + 10 Gary: G / G + 10 4G + 10 = 3(G + 10) 4G + 10 = 3G + 30 4G – 3G = 30 – 10 G = 20 Age of Gary now F = 4(20) = 80 Age of Fred now Age of Fred in 3 years = 83
80) A recipe calls for 2 eggs for every 5 cups of flour. A local chef will use 35 cups of flour, how many eggs must he have? A. 16 B. 18 C. 15 D. 14 E. 17	2:5 = x:35 5x = 2(35) X = 2(35)/5 X = 2(7) X = 14
81) Five out of every seven households have cable TV. If 42,000 households in a certain city have a TV, how many do not have cable TV? A. 12,000 B. 15,000 C. 14,500 D. 13,000 E. 16,000	YT LINK for 81-90 https://youtu.be/nLic7lLdDRs With cable = 5, W/o = 2 , total = 7 2:7 = x:42,000 7x = 2(42,000) X = 2(42,000)/7 X = 2(6,000) X = 12,000

82) Five bananas weigh as much as 3 star apples. In this rate, how many star apples will weigh as much as 45 bananas? A. 27 B. 31 C. 30 D. 29 E. 28	5:3 = 45:x 5x = 3(45) X = 3(45)/5 X = 3(9) X = 27
83) A computer software retailer used a markup rate of 40%. Find the selling price of a computer game that cost the retailer $25. A. $45 B. $60 C. $70 D. $35 E. $80	Selling Price = Cost + Profit = 25 + 0.40(25) = 25 + 10 = 35
84) A rug manufacturer produces rugs at a cost of ₱75 per rug. What is the manufacturer's gross profit from the sale of 150 rugs if 2/3 of the rugs are sold for ₱150 per rug and the rest are sold for ₱200 per rug? A. ₱ 11,250 B. ₱ 17,800 C. ₱ 10,350 D. ₱ 13,750 E. ₱ 16,250	Gross profit = Sales – Cost Cost = 150 x P75 = P11,250 Sales = (2/3)(150)(P150) + (1/3)(150)(P200) = 100(P150) + 50(P200) = P15,000 + P10,000 = P25,000 GP = P25,000 – P11,250 GP = P13,750
85) A man cycling along the road noticed that every 12 minutes a bus overtakes him and every 4 minutes he meets an oncoming bus. If all buses and the cyclist move at a constant speed, what is the time interval between consecutive buses? A. 10 minutes B. 9 minutes C. 5 minutes D. 8 minutes E. 6 minutes	https://youtu.be/0unyWLXCOHk
86) A tank has a capacity of 200 pints. How many gallons of water would it take to fill the tank to 3/10 of its capacity? (1 gallon = 8 pints) A. 9 gallons B. 7 gallons C. 7.5 gallons D. 8.5 gallons E. 8 gallons	Convert pints to gallons 200 pints x 1 gallon/8 pints = 25 gallons (3/10)(25) = 75/10 = 7.5 gallons
87) Tom borrowed $600 at 10% per year, simple interest, for 3 years. How much did he have to repay (principal + interest) at the end of the 3 year period? A. $650 B. $680 C. $740 D. $780 E. $590	F = P(1+rt) Given: P=$600 , r = 10% = 0.1 , t = 3 years F = 600[1+(0.1)(3)] F = 600[1.3] F = $780
88) A desk is being sold at a 36% discount. The sale price is $496. What was its original price?	Selling Price = Original Price – Discount $496 = OP – 0.36(OP)

A. $950 B. $800 C. $775 D. $575 E. $650	$496 = 0.64(OP) $496/0.64 = OP $775 = OP
89) A dish company needs to ship an order of 117 glass bowls. The company will put the bowls into several boxes. Each box must contain the same number of bowls. How many boxes could the company use for the order? A. 13 B. 14 C. 11 D. 12 E. 16	Factor 117 117 = 13 x 9 Thus, there must be 13 boxes with 9 glass bowls each
90) An item that regularly sells for $425 is marked down to $318.75. What is the discount rate? A. 35% B. 30% C. 40% D. 45% E. 25%	Discounted Price = Regular Price – Discount 318.75 = 425 – D 318.75 – 425 = – D -106.25 = - D 106.25 = D Discount rate = discount/Regular price = 106.25/425 = 0.25 = 25%
91) If one-third of a mixture of rice and corn is replaced by corn alone, the resulting mixture becomes 50% corn. What is the percentage of corn in the original mixture? A. 16 2/3% B. 16 2/3% C. 20% D. 25% E. 10%	https://youtu.be/Uya_gQqutaU
92) Lisa bought a big bag of candy at a warehouse store. There are 102 pieces of candy in the bag. Lisa needs to divide the candy up into smaller bags. She wants to put the same number of pieces in each small bag. How many small bags could Lisa use? A. 18 B. 17 C. 20 D. 19 E. 21	YT LINK for 92-100 https://youtu.be/jzU6TQ5n-P0 Get the prime factors of 102 102 = 17(2)(3) Thus, Lisa can use 17 small bags with 6 pieces each.
93) Anne can finish a job in 10 days. Together, Rachel and Anne can finish the same job in 7 days. How many days will it take Rachel to finish the job alone? A. $^{3}/_{7}$ B. 23 ⅓ C. 20 ⅓ D. $^{3}/_{70}$ E. $^{70}/_{3}$	1/A + 1/R = 1/T Given: Anne = 10 , Together = 7 Rachelle = ? 1/10 + 1/R = 1/7 70R(1/10 + 1/R) = (1/7)70R 7R + 70 = 10R 70 = 10R – 7R 70 = 3R 70/3 = R 23 1/3 days = R

94) Leonardo arrives 12 minutes too late for the 14:12 train from Pisa to Milan. This train runs every hour at 12 minutes past the hour. How long must he wait for the next train? A. 24 mins B. 48 mins C. 50 mins D. 12 mins E. 60 mins	12 minutes late, means Leonardo arrived at 14:12 + 0:12 = 14:24 Next train is 15:12 15:12 → 14: 72 –14:24 → 14:24 0:48 Leonardo must wait 48 minutes for the next train
95) The original price of a shirt was $20. It was decreased to $15 . What is the percent decrease of the price of the shirt? A. 25% B. 45% C. 30% D. 20% E. 30%	% decrease = (old price – new price)/old price = (20 – 15)/20 = 5/20 = 0.25 = 25%
96) John can build a wall in 30 days and Peter can demolish the same wall in 40 days. If they work on alternate days with John starting the job on the 1st day , then in how many days will the wall be built for the first time? A. 265 B. 233 C. 234 D. 240 E. 256	https://youtu.be/CD7YtRzDvnU
97) Maria is retired and withdraws money from her retirement account. But a tax of 20% is automatically withheld. If she needs $1200, how much must she actually request? A. $1,800 B. $1,700 C. $1,500 D. $1,650 E. $1,450	Withdraw amount – 20% = $1200 Let X be the amount to withdraw X – 0.20X = 1200 0.8X = 1200 X = 1200/0.8 X = $1500
98) Our school has 8 male teachers who comprise 25% of all our teachers. How many teachers do we have? A. 62 B. 42 C. 22 D. 32 E. 52	Let x be the number of teachers 25% of x = 8 0.25x = 8 X = 8/0.25 X = 32
99) An executive drove from home at an average speed of 30 mph to an airport where a helicopter was waiting. The executive boarded the helicopter and flew to the corporate offices at an average speed of 60 mph. The entire distance was 150 miles; the entire trip took three hours. Find the distance from the airport to the corporate offices. A. 180 miles B. 120 miles C. 150 miles D. 200 miles E. 130 miles	Distance = Rate x Time Total distance = 150 miles Let D1 Distance from airport to office be x D2 Home to airport = 150 – x R1 = 60 mph R2 = 30 mph Total Time = 3 hours T = D/R T1 + T2 = T x/60 + (150-x)/30 = 3 60(x/60 + (150-x)/30) = 3(60)

	x + 2(150 – x) = 180 x + 300 – 2x = 180 -x = 180 – 300 -x = -120 X = 120 miles
100) When Leonardo turns 9, his height is 1.20 m. His height increases by 0.06 m a year during the next 5 years. What will Leonardo's height be when Leonardo turns 14? A. 1.40m B. 1.50m C. 1.75m D. 1.30m E. 1.60m	1st year: 1.20 + 0.06 = 1.26 2nd Year: 1.26 + 0.06 = 1.32 3rd year: 1.32 + 0.06 = 1.38 4th year: 1.38 + 0.06 = 1.44 5th year : 1.44 + 0.06 = 1.50 Shortcut: 1.20 + 5(0.06) = 1.20 + 0.3 = 1.50
101) 120 is 3/5 of what number? a. 24 b. 30 c. 150 d. 200	YT LINK for 101-150 https://youtu.be/loz3mIlHoys 120 = (3/5)x 5(120) = 3x 600 = 3x 600/3 = x 200 = x
102) What is the ratio of 1/3 to 3/4 a. 3:12 b. 3:4 c. 4:9 d. 1:9	1/3 : 3/4 12(1/3) : (3/4)12 4:9
103) 45 is 60% of what number? a. 15 b. 18 c. 27 d. 75	45 = 0.60N 45/0.60 = N 450/6 = N 75 = N
104) What is the value of y if 2x + 2xy + 3y = 25 and x = 2? a. 2 b. 3 c. 12 d. 25	2(2) + 2(2)y + 3y = 25 4 + 4y + 3y = 25 4 + 7y = 25 7y = 25 – 4 7y = 21 y = 21/7 y = 3
105) Number series: 1, 4, 9, 16, 25, ___. a. 30 b. 32 c. 34 d. 36	1^2 = 1 2^2 = 4 3^2 = 9 4^2 = 16 5^2 = 25 6^2 = 36
106) What is 25% of 400? a. 50 b. 100 c. 150 d. 200	0.25 x 400 = 100
107) 20, 10, 40, 10, 60, 20, 80, 60, 100, 240, 120, __, __	Alternating Pattern

a. 1200, 400 b. 480, 140 c. 140, 480 d. 1200, 240	20, 40, 60, 80, 100, 120, next is 140 10x1 = 10, 10x2 = 20, 20x3 = 60, 60x4 = 240, 240x5 = 1,200
108) What is the value of n in the statement 2mn = 50, if m = 1? a. 1 b. 2 c. 25 d. 50	2(1)n = 50 2n = 50 n = 50/2 n = 25
109) What is 150% of 292? a. 4.38 b. 43.8 c. 438 d. 0.438	1.5 x 292 = 438
110) A one-fourth percent of a number is 25. What is the number? a. 100 b. 1,000 c. 10,000 d. 100,000	1/4% N = 25 0.25%N = 25 0.0025N = 25 N = 25/0.0025 N = 250000/25 N = 10,000
111) 90 increased by what percent of itself gives 180? a. 50% b. 100% c. 150% d. 200%	90 + 90N = 180 90N = 180 – 90 90N =90 N = 90/90 N = 1 N = 100%
112) Number series: 5, 6, 9, 15, ___, 40 a. 21 b. 25 c. 27 d. 33	5+1 = 6 6+3 = 9 9+6=15 9+10=25 25+15=40
	1=1 3 = 1+2 6 = 1+2+3 10 = 1+2+3+4 15=1+2+3+4+5
113) Number series: 5, 16, 49, 104 , ___ a. 115 b. 125 c. 148 d. 181	5+11=16 16+33=49 49+55=104 104+77=181
114) 1/2 ÷ 1/4 is ___. a. less than 1. b. more than 1. c. equal to 1. d. undefined	1/2 ÷ 1/4 =1/2 x 4/1 = 4/2 = 2
115) What is the percentage decrease from 80 to 60? a. 20% b. 25% c. 33.33% d. 50%	% decrease = (80-60)/80 = 20/80 =1/4 = 0.25 = 25%
116) What is the percentage increase from 60 to 80? a. 20% b. 25% c. 33.33%	% increase = (80-60)/60 = 20/60 = 1/3 = 0.3333

d. 50%	= 33.33%
117) (4)(-6) + (12x3) = ____ a. 10 b. 12 c. 14 d. 16	(4)(-6) + (12x3) = -24 + 36 = 12
118) The greatest common divisor of 91, 39 and 78 is ___. a. 13 b. 24 c. 39 d. 91	91 = 13(7) 39 = 13(3) 78 = 13(6) GCD = 13
119) The least common multiple of 60, 24 and 12 is ___. a. 12 b. 24 c. 60 d. 120	60 = 2(2)(3)(5) 24 = 2(2)(2)(3) 12 = 2(2)(3) LCM = 2(2)(2)(3)(5) = 120
120) What is the value of 350 grams in kilograms? a. 3.50 b. 0.35 c. 0.035 d. 0.0035	1 kg = 1000 g 350 g x 1kg/1000 g = 350/1000 kg = 0.35 kg
121) What is the value of 5.8 decagrams to milligrams? a. 58 b. 580 c. 5,800 d. 58,000	1 decagram = 10 grams 1 gram = 1000 milligrams 5.8 dag x 10 g / 1 dag x 1000 mg / 1 g = 5.8 x 10 x 1000 mg = 58,000 mg
122) 2:3 is to 7:___ a. 10 b. 10.5 c. 11 d. 11.5	2:3 = 7:n 2n = 3(7) 2n = 21 n = 21/2 n = 10.5
123) The ratio of boys to girls in a class is 5:8. If there are 25 boys, how many are girls? a. 30 b. 35 c. 40 d. 45	5:8 = 25:G 5G = 8(25) 5G = 200 G = 200/5 G = 40
124) A typist can finish 3 pages in 5 minutes. How many pages can he finish in 35 minutes? a. 10 b. 15 c. 18 d. 21	3:5 = P:35 5P = 3(35) 5P = 105 P = 105/5 P = 21
125) 0.12121212... expressed in fraction is? a. 12/100 b. 5/98 c. 4/33 d. 12/50	Let x = 0.12121212… 100x = 12.12121212… Subtract the two equations 99x = 12 x = 12/99 x = 4/33

126) How many degrees are there in the angle made by the hands of a clock at 5 o'clock? a. 60 degrees b. 120 degrees c. 150 degrees d. 180 degrees	360 / 12 numbers in the clock = 30^o Thus, at 5 o'clock the angle made is $5(30^o)$ = 150^o
127) A plane travels 500 miles every 2 hours. How long will it take the plane to fly 2000 miles? a. 4 b. 6 c. 8 d. 10	500:2 = 2000:x 500x = 2(2000) 500x = 4000 x = 4000/500 x = 8
128) A tenant gets 4 sacks of palay for every 7 sacks harvested. Following this ratio, how many sacks of palay would the tenant get if 560 sacks were harvested? a. 280 b. 300 c. 320 d. 350	4:7 = x:560 7x = 4(560) 7x = 2240 x = 2240/7 x = 320
129) If the following quantities were arranged from the least to the greatest, which one would have the second greatest value? a. 6/12 b. 4/10 c. 3/4 d. 2/6	6/12 = 0.5 4/10 = 0.4 3/4 = 0.75 2/6 = 0.3333… Second greatest value is 6/12
130) What is the standard numerical value for 2.16 x 10^5? a. 0.000216 b. 0.0216 b. 2,160 c. 216,000	2.16 x 100,000 = 216,000
131) Which of the following numbers has the greatest value? a. 4/5 b. 51/50 c. 17/20 d. 75%	4/5 = 0.8 51/50 = 1.02 17/20 = 0.85 75% = 0.75 Greatest value is 51/50
132) A fence is to be on posts 8 meters apart around a rectangular lot that measures 40 meters long and 16 meters wide. How many posts are needed, including the ones placed at each corner, to fence the entire lot? a. 12 b. 14 c. 18 d. 20	40 meters long = 6 posts Because 40/8 = 5 16 meters wide = 3 posts Because 16/8 = 2 Total posts = 6+6+1+1 = 14
133) If a worker can wash all the glass windows of a building in 9 days, what part of the job can said worker finish in 6 days? a. 1/4 b. 1/2 c. 1/3 d. 2/3	6/9 = 2/3

134) The numerator of a fraction is 4 less than its denominator. If 3 is added to both the numerator and the denominator the resulting number is 3/4. What is the original fraction? a. 9/13 b. 8/12 c. 11/15 d. 14/10	Let x be the denominator x-4 = numerator (x-4+3)/(x+3) = 3/4 (x-1)/(x+3) =3/4 4(x-1) = 3(x+3) 4x-4 = 3x+9 4x-3x = 9+4 X = 13 The original fractions is 9/13
135) What is the smallest positive number that will give a remainder of 3 when it is divided by 4, 5 or 10. a. 23 b. 33 c. 43 d. 53	Get the LCD of 4,5 and 10, then add 3 LCD = 20 Smallest positive number that will give a remainder of 3 is 23.
136) The ratio of males to females in an organization is M is to F. How many males are there if there are T females? a. (M x T) / F b. (F x T) / M c. (M x T) + F d. T / (F x M)	M:F = x:T xF = MT x = MT/F x = (M x T)/F
137) If the cost of 1 dozen eggs is P60.00, how much does 30 pieces cost? a. P100.00 b. P120.00 c. P150.00 d. P200.00	1 dozen = 12 pieces 12:60 = 30:x 12x = 60(30) 12x = 1800 x = 1800/12 x = 150
138) The mean, median and mode of 5 numbers are equal. The numbers are 29, 18, 24, 25. What is the fifth number? a. 18 b. 24 c. 25 d. 29	When median, mean and mode are equal, the only possible answers will only be 24 and 25. Substitute both in the formula for mean. When fifth number = 24 Mean = (18+24+24+25+29)/5 Mean = 24 Thus, Mean = median = mode = 24
139) Ten nurses earn a total average monthly salary of P120,000. The total average income of 6 of them amounts to P80,000. What is the average total income of each of the remaining workers? a. P400 b. P1,000 c. P10,000 d. P40,000	Let x be the total income of the remaining workers 80,000 + 4x = 120,000 4x = 120,000 – 80,000 4x = 40,000 X = 40,000/4 X = P10,000
140) Two tablespoons is equivalent to 1 liquid ounce while 10 tablespoons is equivalent to 1/2 cup. How many liquid ounces are there in two cups? a. 20 ounces b. 16 ounces c. 10 ounces d. 8 ounces	2tbsp = 1 oz 10 tbsp =1/2 cup 2 cups x 10 tbsp / 1/2cup = 40 tbsp 40 tbsp x 1 oz/ 2 tbsp = 20 oz
141) A taxi charges P50 for the first kilometer and charges P3 for each additional kilometer. How far could P200 go?	First km = P50 Remaining money = P150

a. 50 km b. 51 km c. 66.67 km d. 100 km	P150/3 = 50 km Thus, P200 can go 51 km
142) One store sold twice more apples in the afternoon than in the morning. The store sold 450 pieces of apples. How many apples are sold in the morning? a. 100 b. 150 c. 200 d. 250	Let x be the number of apples sold in the morning 2x = sold in the afternoon X+2x = 450 3x = 450 x = 450/3 = 150
143) Joey gathered twice more marbles than Vic and Tito gathered 2 more marbles than Vic. The total of marbles they gathered together is 26. How many marbles did Vic gathered? a. 6 b. 8 c. 12 d. 14	Let x be the number of marbles gathered by Vic Joey = 2x Tito = x+2 X + 2x + (x+2) = 26 4x + 2 = 126 4x = 124 X = 6
144) A child has read 2/3 of a book. The read part of the book has 100 pages more than the unread. How many pages is the book? a. 500 b. 300 c. 200 d. 150	Let x be the unread part X + 100 = Read part Total = 2x + 100 (2/3)(2x+100) = x+100 2(2x+100) = 3(x+100) 4x+200 = 3x + 300 4x-3x = 300-200 X = 100 (read part) X+100 = 200 (unread) Total = 300
145) a number is divided by 5. The result was subtracted by 154 and the difference is 6. What is the number? a. 800 b. 400 c. 200 d. 160	Let x be the number. x/5 – 154 = 6 x - 5(154) = 6(5) x – 770 = 30 x = 30 + 770 x = 800
146) It takes John 25 minutes to walk to the car park and 45 minutes to drive to work. At what time should he get out of the house in order to get to work at 9:00am? a. 7:50 am b. 8:00 am c. 8:10 am d. 8:20 am	25 minutes + 45 minutes = 70 minutes 70 minutes = 1 hr and 10 minutes 9:00 <u>-1:10</u> 7:50
147) Leo can walk 2 kilometers for 30 minutes. How long does it take Leo to walk 18 kilometers? a. 4 hours b. 4.5 hours c. 5 hours d. 6 hours	2:30 = 18:x 2x = 30(18) 2x = 540 X = 540/2 X = 270 minutes or 4.5 hours

148) A factory produced 2300 TV sets in its first year of production, 4500 sets were produced in its second year and 500 more sets were produced in its third year than in its second year. How many TV sets were produced in three years? a. 7,300 b. 10,000 c. 11,800 d. 12,800	First year: 2300 Second: 4500 Third: 500 Total = 11,800
149) Cj and Mj have a total of 49 toys. If Cj jas 5 more toys than Mj, how many toys does Mj has? a. 22 b. 23 c. 25 d. 27	C + M = 49 → eq1 C = M + 5 → eq2 Substitute C = M+5 in equation 1 M+5 + M = 49 2M + 5 = 49 2M = 49 – 5 2M = 44 M = 44/2 M = 22
150) Mike can eat a quarter of pizza in one minute. How long does it take Mike to eat one pizza and a half? a. 3 minutes b. 6 minutes c. 9 minutes d. 12 minutes	1 ½ pizza = 6 quarters 1 quarter : 1 minute = 6 quarters : 6 minutes
151) at 25% discount, Mang Kanor paid P150.75 for a bag. What was the original price of the bag? a. P201.00 b. P603.00 c. P150.75 d. P37.69	YOUTUBE LINK FOR 151-160 Selling Price = Original Price – Discount 150.75 = x – 0.25x 150.75 = 0.75x 150.75/0.75 = x 201 = x
152) Which of the following is equal to 85 percent of 160? a. 13.6 b. 13,600 c. 136 d. 188	0.85 x 160 = 136
153) Smith invested $5000 for two years. For the first year, the rate of interest was 7% and the second year it was 8.5%. How much interest did he earn at the end of the two-year period? a. $654.08 b. $804.75 c. $670.34 d. $440.45	First year: $5000 x 1.07 = 5350 2nd year: $5350 x 1.085 = 5804.75 Interest = $804.75
154) The ratio of the number of carabaos, goats and cows in a farm is 5:1:2. If there are 48 animals of these kinds in his backyard, how many of them are goats? a. 4 b. 6 c. 2 d. 10	5x + x + 2x = 48 8x = 48 x = 6

155) Liam has originally P15,000. If he spends 25% of his money for clothes, how much is left? a. P12,000 b. P3,750 c. P13,750 d. P11,250	Spend 25%, remaining is 75% 75% of 15,000 = 0.75 x 15,000 = 11,250
156) If a picture frame is 27 cm long and 18 cm wide, what is the ratio of its length to its width? a. 6:3 b. 4:2 c. 2:3 d. 3:2	length = 27 , width = 18 L:W = 27:18 Divide both by 9 =3:2
157) Mary has a monthly salary of $1200. She spends $280 per month on food. What percent of her monthly salary does she spend on food? a. 23% b. 30% c. 35% d. 25%	280/1200 = 0.233333 ~ 23%
158) One trip around a running track is 440 yards. One jogger can complete one lap in 8 minutes, the other can complete it in 6 minutes. How long will it take for both joggers to arrive at their starting point together if they start at the same time and maintain their jogging pace? a. 36 minutes b. 12 minutes c. 15 minutes d. 24 minutes	Find the least common multiple of 8 and 6. Multiples of 8: 8, 16, 24 Multiples of 6: 6,12, 18, 24 LCM = 24
159) Sarah is making bead necklaces as treats for her party. She has 90 green beads and 108 blue beads. What is the greatest number of identical necklaces she can make is she wants to use all of the beads? a. 16 b. 12 c. 11 d. 18	Find the GCF of 90 and 108, since all the beads will be used. Find the prime factors of 90 and 108. 90 = 2(3)(3)(5) 108 = 2(2)(2)(3)(3) GCF = 18
160) The elevator in an eleven-story office building travels at the rate of one floor per 1/4 minute, which allows time for picking up and discharging passengers. At the main floor and at the top floor, the operator stops for 1 minute. How many complete trips will an operator make during a 7-hour period? a. 42 trips b. 56 trips c. 60 trips d. 88 trips	1st: 1 minute 1st to 11th: 10x0.25 = 2.5 minutes 11th: 1 minute 11th to 1st: 10x0.25 = 2.5 minutes Total round trip = 7 minutes 7 hours / 7 minutes = 420 minutes / 7 minutes = 60 trips
161) 16 is what percent of 80? a. 4% b. 16% c. 20% d. 40%	YOUTUBE LINK FOR 161-170 https://youtu.be/WApwueCTErA 16 = Nx80 16/80 = N 0.2 = N

e. 50%	20% = N
162) 12 is what percent of 300? a. 1% b. 2% c. 3% d. 4% e. 5%	12 = N x 300 12/300 = N 0.04 = N 4% = N
163) 12 is what percent of 8? a. 40% b. 60% c. 66 2/3% d. 80% e. 150%	12 = N x 8 12/8 = N 3/2 = N 1.5 = N 150% = N
164) What is 8% of 150? a. 15 b. 16 c. 12 d. 25 e. 24	N = 8% of 150 N = 0.08 x 150 N = 12
165) What is 17% of 20? a. 1.7 b. 3.4 c. 3.6 d. 2.6 e. 2.8	N = 17% of 20 N = 0.17 x 20 N = 3.4
166) What is 12 1/2% of 80? a. 32 b. 4 c. 16 d. 10 e. 8	N = 12 1/2% of 80 N = 12.5% x 80 N = 0.125 x 80 N = 10
167) What is 60% of 60? a. 1 b. 10 c. 12 d. 36 e. 100	N = 60% of 60 N = 0.6 x 60 N = 36
168) 400 is 500% of what number? a. 2000 b. 20 c. 80 d. 8 e. 30	400 = 500% of N 400 = 5N 400/5 = N 80 = N
169) 15 is 75% of what number? a. 20 b. 24 c. 25 d. 45 e. 30	15= 75% of N 15 = 0.75N 15/0.75 = N 1500/75 = N 20 = N
170) 27 is 33 1/3% of what number?	27 = 33 1/3% of N

a. 3 b. 9 c. 27 d. 54 e. 81	27 = 1/3 x N 3(27) = N 81 = N
171) $7(2) - 3\{22 - [6(8) \div (22)]\} = ?$ a. -10 b. 10 c. 25 d. 28 e. 38	YOUTUBE LINK FOR 171-175 https://youtu.be/WUwzR3yJ_Iw $7(2) - 3\{2^2 - [6(8) \div (2^2)]\}$ $=14 - 3\{4 - [48 \div 4]\}$ $= 14 - 3\{4 - (12)\}$ $= 14 - 3\{-8\}$ $= 14 + 24$ $= 38$
172) $[15 - (3^3 - 5 - 9)] + 4^2 \div 2^3(7) = ?$ a. 10 b. 12 c. 20 d. 16 e. 28	$[15 - (3^3 - 5 - 9)] + 4^2 \div 2^3(7)$ $= [15 - (27 - 5 - 9)] + 16 \div 8(7)$ $= [15 - (13)] + 2(7)$ $= 2 + 14$ $= 16$
173) $4^3(2) \div 2(4) - (8 - 3 + 2) - 7 = ?$ a. 2 b. 4 c. 28 d. 242 e. 256	$4^3(2) \div 2(4) - (8 - 3 + 2) - 7$ $= 64(2) \div 2(4) - (7) - 7$ $= 128 \div 2(4) - 7 - 7$ $= 64(4) - 7 - 7$ $= 256 - 7 - 7$ $= 249 - 7$ $= 242$
174) $7(6 + 5) \div (21 \div 3) + 4 + 3 = ?$ a. 11 b. 15 c. 18 d. 20 e. 21	$7(6 + 5) \div (21 \div 3) + 4 + 3$ $= 7(11) \div 7 + 4 + 3$ $= 77 \div 7 + 4 + 3$ $= 11 + 4 + 3$ $= 15 + 3$ $= 18$
175) $(63 \div 9) + 5(15 \div 3) - (4 \times 6) = ?$ a. 4 b. 8 c. 12 d. 24 e. 36	$(63 \div 9) + 5(15 \div 3) - (4 \times 6)$ $= 7 + 5(5) - 24$ $= 7 + 25 - 24$ $= 32 - 24$ $= 8$
176) A group of men went fishing, agreeing that each should pay the same amount. The total bill was P168. If there had been two fewer men, each man would have to pay 2 pesos more. How many men went fishing? a. 15 b. 14 c. 13 d. 12 e. 8	https://youtu.be/NOGJU8BWF64 Factor 168. 168 = 12(14) Thus, number of men is 14 and their contribution is P12
177) The difference between two positive numbers is 10 and the ratio between them is 5:3. Find the product of the two numbers?	https://youtu.be/rx0TwQ409Vo $5x - 3x = 10$

a. 15 b. 25 c. 250 d. 375 e. 425	2x = 10 X = 5 5x = 5(5) = 25 3(5) = 15 Product = 15(25) = 375
178) The sum of Jean's and Marius' age is 30. Jean's age 4 years from now is double Marius's age last year. How old is Marius now? a. 6 b. 8 c. 10 d. 12	YOUTUBE LINK FOR 178-181 https://youtu.be/LnBgq3yRIMc J + M = 30 -> eq 1 → J = 30 - M (J+4) = 2(M-1) ->eq 2 J+4 = 2M – 2 (30-M)+4 = 2M-2 34-M = 2M-2 34+2 = 2M+M 36 = 3M 12 = M
179) Brandon's age is thrice Edward's age. Peter's age is half Brandon's age. If Peter is 7 years older than Edward, how old is Brandon? a. 24 b. 32 c. 42 d. 60	B = 3E -- > eq1 P = B/2 -- > eq 2 P = E + 7 -- > eq3 Equate eq2 and eq3 B/2 = E+7 Substitute eq1 and solve for B B/2 = B/3 + 7 Multiply both sides by 6 3B = 2B + 42 3B-2B = 42 B = 42
180) The product of Dave and Daniel's age is 96. Three years from now, the product of their ages will be 165. What are their ages? a. 4 and 24 b. 2 and 48 c. 3 and 32 d. 8 and 12	Trial and error is the easiest way. xy = 96 (x+3)(y+3) = 165 By inspection, 8x12 = 96 11x15 = 165
181) Lawrence has a daughter, Janet. Five years ago, he was 4 times as old as Janet. Two years from now, he will be three times as old as Janet. How old is Lawrence now? a. 21 b. 45 c. 56 d. 61	(L-5) = 4(J-5) -- > eq1 (L+2) = 3(J+2) -- > eq2 Simplify and solve for L L-5=4J-20 -- > L=4J-15 L+2=3J+6 -- > L=3J+4 4J-15 = 3J+4 4J-3J = 4+15 J = 19 L=3J+4 = 3(19)+4 = 61
182) A train goes from station A to station B at a speed of 200 km/h. While returning, the train has a better engine. It is faster by 100 km/h than the old engine. What is the train's average sped for the round trip? a. 200 kph b. 690/3 kph c. 720/3 kph d. 400/3 kph	https://youtu.be/84FIn90mHVg average speed = total distance/total time t1 = D/200 , t2 = D/300 total distance = 2D average speed = 2D/(D/200 + D/300) = 2D/(3D/600 + 2D/600) = 2D/(5D/600)

e. nota	= 2(600)/5 = 240 kph
183) Fatima's age was twice of her present age, when subtracted from four times three years from hence, with three times the three years before her present age. What will be her age after one year? a. 21 years old b. 22 years old c. 23 years old d. 24 years old e. 25 years old	YOUTUBE LINK FOR 183-184 https://youtu.be/1_GRE-g_Zc0 4(F+3) – 3(F-3) = 2F 4F+12-3F+9=2F F+21=2F 21 = F (age now) Age after one year is 22.
184) The average age of a couple is 24 years when they are married 5 years ago. But now, the average age of the husband, wife and child is 20 years, and the child was born during the interval. What is the present age of the child? a. 2 years old b. 3 years old c. 4 years old d. 5 years old e. 6 years old	Average = (H+W)/2 = 24 (5 years ago) H+W = 48 After 5 years: H+W+10 = 58 Average = 20 = (58+C)/3 58+C = 60 C = 2
185) When Maria was born her mother was 24 years old. At present Maria's age is 20 percent of her mother's age. How old is Maria now? a. 5 b. 3 c. 9 d. 6	https://youtu.be/e3TsMTJCNLI Let Maria's present age be x Mother's age = 24+x x = 0.2(24+x) x = 4.8 + 0.2x x – 0.2x = 4.8 0.8x = 4.8 X = 4.8/0.8 X = 6
186) The difference between a two-digit number and the number obtained by interchanging its digits is 36. What is the difference between the sum and the difference of the digits of the number if the ratio between the digits of the number is 1:2? a. 4 b. 8 c. 16 d. 32	https://youtu.be/8bBowMTn_ec By trial and error, the only possible answers are 21, 42, 63 and 84. 84 – 48 = 36 (8+4) – (8-4) =12-4 =8
187) In how many ways can you guess an answer in a 10-item True of False question? a. 2048 b. 1024 c. 512 d. 256	YT LINK for 187-191 https://youtu.be/76BhsyUduJs 2^10 = 1024
188) How many ways can you arrange three Science books (Biology, Chemistry, Physics) in any order on a shelf? a. 24 b. 18 c. 12 d. 6	3! = 3x2x1 = 6
189) Rica has 7 red T-shirts and 5 green T-shirts. If she picks one T-shirt at random, what is the probability that it will not be green?	P(not Green) = 7/12

a. 1/2 b. 1/6 c. 5/12 d. 7/12	
190) How many ways can seven people be seated at a round table? a. 5040 b. 840 c. 720 d. 120	(n-1)! (7-1)! = 6! =6x5x4x3x2x1 = 720
191) The face of a coin is either head or tail. If there are three coins tossed, what is the probability of getting three tails or three heads? a. 1/4 b. 1/8 c. 3/8 d. 3/4	Sample space = {HHH, HHT, HTH, HTT, THH, THT, TTH, TTT} P(3H or 3T) = 2/8 = 1/4
192) A certain job can be done by 70 men in 100 days. 80 men at the start of the project but after 20 days, 30 of them had to be transferred to another project. How long will it take the remaining work to complete the job? a. 112 days b. 111 days c. 109 days d. 108 days	YT LINK for 192-194 https://youtu.be/L3UtwWtOpMk 70(100) = 80(20) + 50x 7000 = 1600 + 50x 5400 = 50x 5400/50 = x X = 108 days
193) Nine men can finish the job in 13 days. Five men were working at the start and after 5 days five men were added. How many days will it take to finish the job? a. 9.2 days b. 9.3 days c. 9.4 days d. 9.5 days	9(13) = 5(5) + 10x 117 = 25 + 10x 92 = 10x 92/10 = x X = 9.2 days
194) A job can be done by 11 workers in 15 days. Four workers started the job, they were reinforced with four more workers at the beginning of 5th day. Find the total number of days it took them to finish the job. a. 22.526 days b. 22.256 days c. 22.625 days d. 22.652 days	11(15) = 4(4) + 8x 165 = 16 + 8x 149 = 8x 149/8 = x X = 18.625 Total = 4 + 18.625 = 22.625 days
195) Martin has some marbles in his collection. He also received some marbles from his friends. Grace gave Martin 6 more than half the number of marbles that Martin has. Paul gave martin half the number of marbles that Grace gave. After Grace and Paul gave marbles to Marin, Martin had 30 marbles. How many marbles did Martin initially have? a. 18 b. 16 c. 14 d. 12	YT LINK for 195-197 https://youtu.be/gd3tOvIigzg Let x be the number of Marbles of Martin x + (x/2+6) + (1/2)(x/2+6) = 30 x + x/2 + 6 + x/4 + 3 = 30 4x + 2x + 24 + x + 12 = 120 7x + 36 = 120 7x = 84 x = 12

196) Car A and Car B started from the same place and are moving in opposite directions. Car A is 12 kph faster than Car B. After 2 hours, the cars are 304 km apart from each other. How fast is Car B? a. 65 kph b. 70 kph c. 72 kph d. 75 kph	Let x be the rate of Car B X+12 = rate of car A 2(x+12) + 2x = 304 2x + 24 + 2x = 304 4x = 280 x = 70 kph
197) Working together, Myrna and Lea can finish a report in 2 hours. If Myrna finishes the report alone, it will take her 3 hours to finish it. How many hours can Lea finish the report alone? a. 3 hours b. 4 hours c. 5 hours d. 6 hours	1/M + 1/L = 1/T 1/3 + 1/L = 1/2 6L(1/3 + 1/L) = (1/2)6L 2L + 6 = 3L 6 = L
198) Two buses start from a bus terminal with speed of 20 km/h at interval of 10 minutes. What is the speed of a man coming from the opposite direction towards the bus terminal if he meets the buses at the interval of 8 minutes? a. 3 km/h b. 4 km/h c. 5 km/h d. 7 km/h	https://youtu.be/2y3gOLzM8Wc Distance of 10minutes = distance of 8 minutes 20(10) = 20(8) + 8x 200 = 160 + 8x 40 = 8x 5 = x
199) A piece of work can be done by Ador and Marco in 10 hours, by Ador and July in 12 hours, and by Marco and July in 20 hours. Find how long would it take by Ador to do the job alone. a. 60 hours b. 15 hours c. 25 hours d. 30 hours	https://youtu.be/LZzBcNNtJ4w 1/A+1/M=1/10 -> eq 1 1/A+1/J=1/12 -> eq 2 1/M+1/J=1/20 -> eq 3 Subtract (3) from (2) 1/A-1/M=1/30 -> eq 4 Add equation (1) and (4) 2/A=4/30 4A=60 A=15
200) A flask contains 500 ml of 80% alcohol solution in water. How much of this solution must be drawn off and replaced by water to obtain a solution having a concentration of 25% alcohol? a. 200 ml b. 312.5 ml c. 343.75 ml d. 402.25 ml	https://youtu.be/OBYuz4hrshU 80% of 500 = 400 (Alcohol) Remaining alcohol = 400 - 0.8x New mixture 25% of 500 = 125 (Alcohol) 400 - 0.8x = 125 400 - 125 = 0.8x 275 = 0.8x 275/0.8 = x 343.75 = x