P-5 The time required for two examinees to solve the same problem differs by two minutes. Together they can solve 32 problems in one hour. How long will it take for the slower problem solver to solve the problem?

P-6 A mechanic and his helper can repair a car in 8 hours. The mechanic works 3 times as fast as his helper. How long would it take the helper to make the repair working alone?

P-7 The father can do a certain job in 9 days while his son can do the same job in 16 days. On a given day, they started working together, but after four days the son left and the father finished the job alone. How many more days did the father worked alone?

P-8 Ten liters of 25% salt solution and 15 liters of 35% salt solution are poured into a drum originally containing 30 liters of 10 % salt solution. What is the percent concentration in the mixture?

P-9 How many pounds of water must be removed from a 50 lb of 3 % salt solution so that the remaining solution will be 5 % salt?

P-10 Two turtles A and B start at the same time move towards each other at a distance of 150 m. The rate of turtle A is 10 m/s while that of 20 m/s. A fly flies from one turtle to the other at the same time that the turtles start to move toward its each other. The rate of the fly is constant at 100 m/s. Determine the total distance traveled by the fly until the two turtle met..

P-11 An airplane travels from two airports with a distance of 1500 km with a wind along its flight line. It takes the airplane 2 hours with the tailwind and 2.5 hours with the headwind. Determine the velocity of the airplane in still air?

P-12 Two jet planes traveling towards each other took the same time from two airports located 4800 km apart. If they meet after 2 hours, determine the speed of the faster plane if it is flying at a speed of 160 kph faster than the other.

P-13 A motorboat has an average speed of 20 kph in still water. It can travel upstream 5 km against a river current in the same time that it can travel downstream 7 km with the river current. What is the speed of the current?

P-14 Given a 3-digit number. The sum of the digits is 14. The unit's digit is half the ten's digit. If the digits are reversed, the resulting number is 198 more than the original number. Find the number.

P-15 If 3 is subtracted from the numerator of a certain fraction, the value of the fraction becomes 3/5. If one is subtracted from the denominator of the same fraction, the value of the fraction becomes 2/3. Find the original fraction.

P-16 How many minutes after 7 o'clock will the hands of the clock be:
A. Together
B. Opposite each other
C. At right angles with each other

P-17 Eve open her coin purse and found pennies, nickels and dimes with a total value of $2.85 .If there are twice as many pennies as there are nickels and dimes combined, how many pennies, dimes, and nickels are there if she has a collection of 90 coins?

P-18 A boy has a number of coins in his pocket consisting of nickels, dimes, and pennies. There are two more nickels than dimes and three times as many pennies as dimes. If the boy has a total of 64 cents, how many pennies does he have?

P-19 If x varies as y and inversely as z and x = 14 when y = 7 and z = 2. Find the value of x when y = 16 and z = 4.

Please Proceed to Take Home Exam...
Good luck!

55. A theater seats has 100 people. Admission is P 50 for men and P 10 each for the women and P0.50 each for the children. How many men should there be in order to fill every seat and take up in just P 1000?
A. 20 C. 19
B. 21 D. 18

56. In a party there are 316 guests composed of men, women and children. There are 78 more children than women and 56 more women than men. How many men in the party?
A. 42 C. 50
B. 46 D. 44

57. It takes an airplane one hour and forty-five minutes to travel 500 miles against the wind and covers the same distance in one hour and fifteen minutes with the wind. What is the speed of the airplane?
A. 342.85 mph C. 375.50 mph
B. 450.50 mph D. 285.75 mph

58. A speed boat can make a trip of 100 miles in one hour and 30 minutes if it travels upstream. If it travels downstream, it will take one hour and 15 minutes to travel the same distance. What is the speed of the boat in calm water?
A. 84.45 mph C. 73.33 mph
B. 78.43 mph D. 89.56 mph

59. Sarah can walk 4 km in the time it takes Jane to walk 5 km. Sarah requires 3 minutes longer that Jane to walk for a km. Find the rate of Sarah.
A. 4 km/hr C. 7 km/hr
B. 5 km/hr D. 3 km/hr

60. The difference between two numbers is 12. If 2 is added to 7 times the smaller, the result is the same as when 2 is subtracted from 3 times the larger. Find the numbers.
A. 20 and 6 C. 15 and 3
B. 20 and 8 D. 17 and 2

61. The quotient of a two-digit number divided by the sum of the digits is 4. If the number be subtracted from the sum of the squares of its digits the difference is 9. Find the number.
A. 36 C. 30
B. 42 D. 54

62. A boatman rows to a place 48 km distant and back in 14 hours; he finds that he can row 4 km with the stream in the same time as 3 km against the stream; find the rate of the stream.
A. 2 km/hr C. 1 km/hr
B. 1.5 km/hr D. 2.4 km/hr

63. Find the number such that their sum multiplied by the sum of their squares is 65, and their difference multiplied by the difference of their squares is 5.
A. 3 and 2 C. 4 and 5
B. 1 and 3 D. 1 and 4

64. The illumination receives from a light source varies inversely as the square of the distance from the source and directly as its candle power. At what distance from a 50-cp light would the illumination be one-half that received at 20 ft from a 40-cp light?
A. 10 sq. rt. of 10 C. 10 sq. rt. of 5
B. 5 sq. rt. of 10 D. 3 sq rt. 10

65. At a small town, a movie theater charges $5 admission to men, $2 to women, and 10 cents to children. One afternoon, the owner goes to check and finds that there are $100 in the box office. When he goes in, he can count in the darkened theater 100 heads, but cannot tell how many are men, how many women, and how many children. How many children are in the theater?
A. 19 C. 70
B. 11 D. 30

66. John bought a pencil and received change for $3 in 20 coins, all nickels and quarters. How many of each kind are given?
A. n=10, q=10 C. n=9, q=11
B. n=12, q=8 D. n=11, q=9

67. A box contains nickels, dimes, and quarters worth a total of $2.10. There are twice as many dimes as quarters, and the number of nickels is two less than the number of dimes. How many dimes are there?
A. 8 C. 4
B. 6 D. 7

68. The single discount equivalent to the discount series of 20 percent, 10 percent and 5 percent is
A. 21.66% C. 30.0%
B. 31.60% D. 35.0%