Name _____

"Solving Equations"

Solve the Equations – Show all necessary work!

1. $63 = 9y$ 2. $-\dfrac{x}{7} = 14$ 3. $\dfrac{7}{2}x = 28$ 4. $2x + 7 = 31$

5. $\dfrac{x}{10} + 3 = 12$ 6. $9n + 15 + 6n = 60$ 7. $8x - 3(x - 7) = -39$

8. $10(x + 3) + 8 = 10x + 11$ 9. $4(4n - 5) = 2(8n - 10)$

Solve the Proportions – Show all work!

10. $\dfrac{18}{x-2} = \dfrac{4}{3}$

11. $\dfrac{3}{-2n} = \dfrac{36}{4}$

12. A rental car agency charges $16 per day plus $0.14 per mile to rent a certain car. Another agency charges $23 per day plus $0.10 per mile to rent the same type of car. How many miles per day will have to be driven for the cost of a car from the first agency to equal the cost of a car from the second agency?

13. A worker on an assembly line takes 7 hours to produce 28 parts. At this rate, how many parts can the worker produce in 35 hours?

14. At an end of summer sale, a homeowner saved $136.89 on a purchase of lawn furniture that originally sold for $507. What percent of the original price did the homeowner save?

15. Write the equations in function form. (Solve for "y"):

a) $7x + y = 13$

b) $8x + 3y = 30$

16. 60 is 4.2% of what number?

17. The number of subscribers to a newsletter decreased from 2500 to 1675.
     What was the percent of decrease in circulation?

18. Using the simple interest formula, I=Prt : Find the amount of time it would take to earn $1800 in interest
     on an investment of $23,000 at a rate of 4.3%.

19.   What number is 40% of 90?

20. A survey was taken to determine the favorite ice cream flavors of 2nd graders. The results are shown in the graph.
     a) About what percent of the 2nd graders chose chocolate as their favorite flavor? Round to the nearest percent.

Favorite Ice Cream Flavors
Vanilla, 40
Strawberry 20
Chocolate, 120
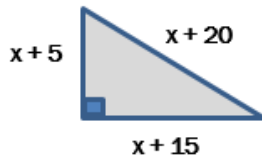Other 50
Cookies 'n Cream, 110

b) Suppose you needed to order ice cream cups for a group of
    700 2nd graders. Based off of the previous results, how
    many chocolate cups would you need to order?

21. You would like to purchase 5 pounds of Trail-Mix from Sprouts. It costs $6.99 per pound. If the tax rate is 8.35%, what will the total cost of the Trail-Mix be? Round to the nearest hundredth.

22. In August, a survey of 500 students showed that 200 of those students reported Math as being their favorite subject. That same survey was given again in September to 500 students and it showed that 350 students reported Math being their favorite subject. What is the percent of increase of the number of students who reported Math as being their favorite subject?

23. The perimeter of the triangle is 100 cm. Write and equation and solve to find the AREA. ($A = 1/2\ bh$)

Triangle with sides labeled $x + 5$, $x + 20$, and $x + 15$.

24. At an end of summer sale, a homeowner saved $136.89 on a purchase of lawn furniture that originally sold for $507. What percent of the original price did the homeowner save?

25. What percent of 32 is 16?

26. Sarah sold 12 tickets to the school play and Diego sold 16 tickets.
    a) What is the ratio of the number of tickets that Sarah sold to the number that Diego sold?

    b) What is the ratio of Sarah's tickets sold to the total?

27. Solve the equation for "L". $P = 2L + 2W$