**Solving Equations Review**

**Types of Equations**

1. Find the root of the following equations. Check for questions B, G, and L.

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| --- | --- | --- |
| **Simple Equations** | **Multi-Step Equations** | **Fractional Equations** |
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|  |  |  |
|  |  |  |
|  |  |  |
| Check for G. | Check for B.    ; RS=8  ; | Check for F. |

**Formulas**

1. Solve for each formula for the variable indicated.

|  |  |  |
| --- | --- | --- |
| 1. ; | 1. ;  & | 1. ; |
| 1. ; | 1. ; | 1. ; |

1. The surface area of a sphere is given by the formula, where  is the radius of the sphere.
   1. Rearrange the formula so the radius, is in terms of the area, .
   2. Using your answer from a), find the radius of the ball if the area is.

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**Word Problems**

Age Questions

* + 1. Barry is 5 years older than Artem. If the sum of their ages is 37 then how old is Barry?

*Let x represent Artem’s age, so that Barry’s age is represented by (x+5)*

* + 1. Karan is four years younger than Dan. Ryan is 6 years older than Dan. Together their ages total is 113. Determine their ages.

*Let x represent Dan’s age, so that Karan’s is represented by (x-4) and Ryan’s age is represented by (x+6).*

* + 1. Dave’s uncle is twice as old as him. In 20 years, the sum of their ages will be 97. How old is Dave’s uncle right now?

*Let x represent Dave’s age. Let 2x represent the uncle’s age.*

*In 20 years, Dave will be (x+20) and the uncle will be (2x+20)*

Value Questions

* + 1. Emma has a bag of coins which includes quarters and nickels only. She counts the coins and finds she has 58 coins which total $7.30. Determine how many quarters and nickels Emma has.

*Let x represent the number of quarters. Let 58 –x represent the number of nickels.*

(in dollars)

Or (in cents)

* + 1. Maxine sold 120 boxes of two types of cookies. The chocolate cookies sold for $3.50 and the vanilla cookies sold for $2.75. Her total sales were $393.75. How many of each type of cookie did she sell?

*Let n represent the number of chocolate cookies sold and (120-n) represent the number of vanilla cookies sold.*

Number Questions

* + 1. The sum of four consecutive numbers is 970. Determine the numbers.

*Let x represent the 1st number, (x+1) the 2nd number, (x+2) the third number, (x+3) the fourth number.*

* + 1. For two consecutive even integers, the sum of the smaller and twice the larger is 5650. Find the numbers.

*Let n represent the 1st number, (n+2) the 2nd number.*

* + 1. Jessica took out a one month gym membership to try it out. She had to pay an initial fee of $15 plus $6 per visit. She spent a total of $81 for the month. How many visits did she make?

*Let v represent the number of visit to the gym.*

* + 1. There are 26 black marbles. This is four more than twice the number of red marbles. How many red marbles are there?

*Let r represent the number of red marbles.*

* + 1. The length of a swimming pool at a resort is 25 metres less than 3 times its width. The perimeter is 62 metres. Find the dimensions of the pool.

*Let w represent the width of the pool. Let 5w-2 represent the length of the pool*