

Algebra Level 1

1) Bill weighs 42 pounds more than Steve. Together they weigh 370 pounds. How much does Steve weigh?

2) Four consecutive numbers add up to 1850. What is the smallest number?

3) There are 4 brothers opening Christmas presents from their parents. The oldest brother received \$10 more than his next younger brother who received \$10 more than his next younger brother who received \$10 more than the youngest brother. The total amount the 4 brothers received was \$504. How much did the oldest brother receive?



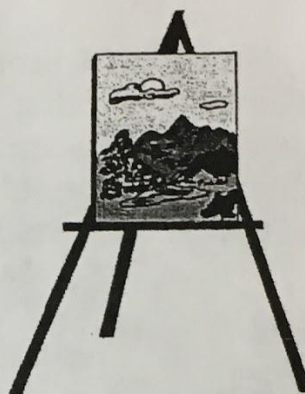
4) Five sisters' ages added up to 211. The oldest sister's age was 3 times that of the youngest. The next to the oldest was 2 years younger than the oldest and the middle sister was twice as old as the youngest. The remaining sister was 3 years older than the youngest sister. What is the age of the oldest sister?

5) Jay weighs 20 pounds more than Dan, whose weight is twice what Kirsten's is. Their total weight is 320 pounds. How much does Kirsten weigh?



6) Four consecutive multiples of 5 add up to 4130. What is the largest number?

7) Kyle earned a total of \$12,500 for drawing 5 pictures. The money he received for each picture was \$28 more than the money he received from the previous picture. In other words, he was paid \$28 more for the second picture than the first, \$28 more for the third than the second, and so forth. How much was he paid for the 1st picture?



8) Eight times a number is the same as that number plus 84. What is the number?

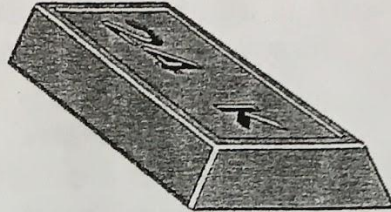
9) Luke has \$21 more than Rachel and \$48 more than Daniel. All together they have \$168. How much money does Luke have?

10) A horse cost \$900 more than the saddle. Together they cost \$1000. How much does the saddle cost?



Algebra Level 2

- 1) $\frac{1}{3}$ the weight of a bar of gold plus 30 pounds equals the weight of that bar of gold. How much does the bar of gold weigh?



- 2) Cheri is \$23 short of having enough money to buy a gold coin. Denzel is \$28 short of having enough money to buy that same coin. If they combine their money, they will have exactly enough to buy the coin. How much does the coin cost?

- 3) If a 17 kilogram weight is placed on top of 2 bricks, the total weight would be the same as if 17 kilograms is removed from 3 bricks. How much does each brick weigh?

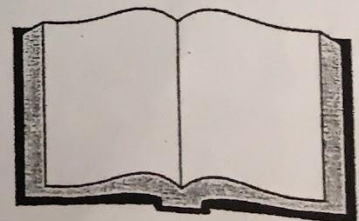
- 4) I have 19 coins that are worth a total of \$1.10. If they consist only of dimes and nickels, then how many nickels do I have?



- 5) In a pile of nickels and dimes, the number of nickels is three times the number of dimes and the pile is worth \$1.75. How many nickels are there?

- 6) Donnie has \$5.10 in nickels, dimes, and quarters. He has an equal number of dimes and nickels, with the value of the quarters being \$2.40 more than the total value of the dimes and nickels. How many dimes does he have?

- 7) Jay's favorite book is 182 pages less than three times Mitchel's favorite book. If both books have the same number of pages, how many pages are in Jay's favorite book?



8) In the sequence 3, 8, 13, 18, what term of the series is the number 2218?

9) Blood pressure is a measure of the pressure of the blood inside the arteries. Blood pressure is expressed in the form:

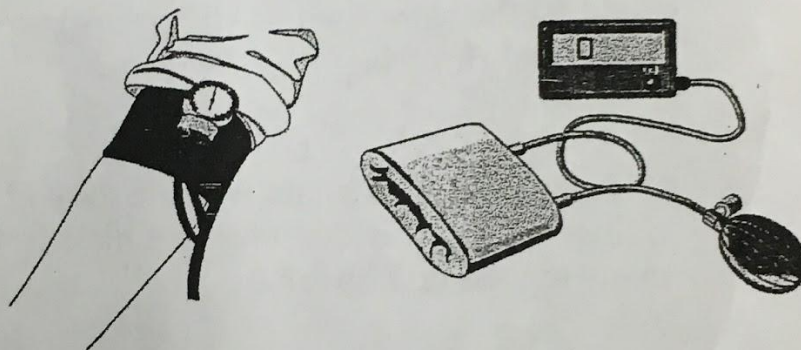
Systolic pressure

Diastolic pressure

The systolic pressure, which is the higher number, is the pressure exerted on the arterial walls when your heart is beating. The diastolic measurement is the pressure exerted on the arterial walls when the heart is resting. To find what a normal systolic blood pressure should be, you use the following equation:

$$\text{Normal systolic} = \frac{\text{Age of person}}{2} + 110$$

What is the normal systolic blood pressure for an adult who is 56 years old?

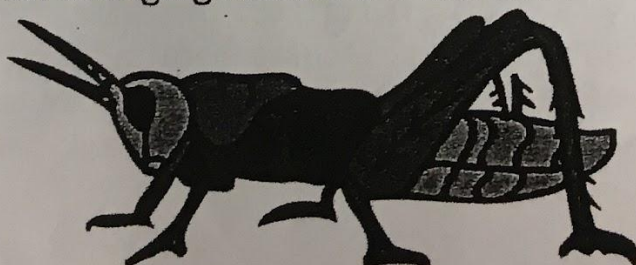


10) The number of times a cricket chirps per minute can help you determine the temperature of the air. Use the following formula to find the approximate air temperature.

$$\text{Temperature (in Celsius)} = \frac{\text{Chirps per minute} + 30}{7}$$

If a cricket chirps 159 times per minute, what is the temperature of the air expressed in Fahrenheit?

The formula for changing Celsius to Fahrenheit is: $F = \frac{9}{5}(C) + 32$

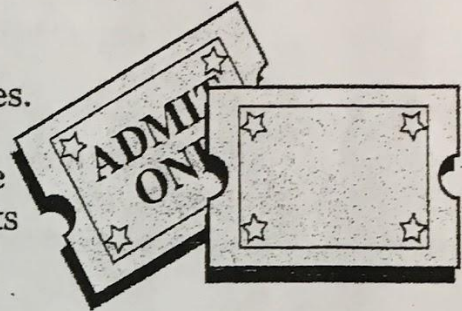


Einstein Level



1) There are 5 people standing in a room. Rick is 5 times the age of Mike who is half the age of Larry. Ed is 30 years younger than double Larry and Mike's combined ages. Daniel is 79 years younger than Rick. The sum of their ages is 271. How old is Daniel?

2) A movie theater charges \$7 for adults, \$5 for school-age children and \$3 for babies. A group of people went to the theater. There were the same number of school-age children as babies and the number of adults was the same as school-age children and babies combined. If the group paid \$1562, how many babies were in the group?



3) Dave is three times older than Jim, and Jim is half Bill's age. If their average age is 64, what is Jim's age?

4) Nick has 3 times the money Stacey has and Lindsey has 4 times the money that Stacey has. If Rick's \$120 is added to the group, the average amount of money the four have is \$150. How much money does each person have?

5) I have 59 coins that include pennies, nickels, dimes, and quarters. There are twice as many dimes as nickels and 3 times as many quarters as dimes. The total value of the coins is \$7.23. How many of each kind of coin do I have?



6) Eric, Warren, and Mike were each given an amount of money that was determined by multiplying half their age by their grandfather's age. If the total amount of money given to the three was \$1,656, and their ages total 46, what is the age of their grandfather?



7) Michelle was working as a clerk in a clothing store. She made a mistake and charged the wrong sales tax. She should have charged 5%, but she charged 6%. The total amount of money she collected for the day, including sales tax, was \$620.10. How much money would she have collected if she charged the correct sales tax?

8) A rectangle has a length that is 6 times longer than its width. If the area of the rectangle is 1014 square feet, what are the length and width of the rectangle? What is the equation that you would use to solve the problem?

9) The length of a rectangle is 8 times its width. The perimeter of the rectangle is 216 inches. What is the algebraic equation you would use to solve this problem? What is the length of the rectangle?

10) I have pennies, nickels, dimes, quarters, one dollar bills, and five dollar bills. There are twice as many nickels as pennies, twice as many dimes as nickels, three fewer quarters than dimes and the same number of one dollar bills and five dollar bills as there are nickels. The total value of the money I have is \$93.82. How many dimes do I have?

Super Einstein Problem



A rocket leaves earth for the sun at a speed of 28,800 mph. At the same time a photon of light leaves the sun for the earth. If we assume they are on flight paths that allow them to meet, how far will the rocket be from earth when the photon of light hits it? (Assume a distance of 93,000,000 miles to the sun and round your answer to the nearest thousand miles.) (A rocket launched from the earth will gradually build up speed. For this problem, we will assume that the rocket travels at 28,800 mph the instant it leaves the earth.)

