

Always call the smallest unknown n . If we didn't do that in the last example we would have called Jordan n , and Steve would have been $\frac{1}{2}n$. There's nothing wrong with having fractions in our expressions, but it makes them a little bit messy.

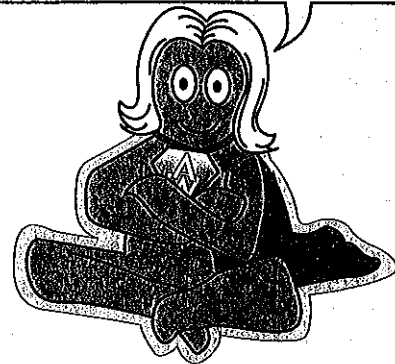
Look at the sentences below and the translations into the language of algebra. See if you can understand why the algebraic expressions are written the way they are.

Sentences	Algebraic Expressions
Jill is three years older than Nancy	Expression for Nancy: n Expression for Jill: $n + 3$
Rick weighs 56 pounds more than Ed	Expression for Ed: n Expression for Rick: $n + 56$
Three consecutive numbers	Expression for the smallest: n Expression for the next number: $n + 1$ Expression for the largest: $n + 2$
Three consecutive even numbers	Expression for the smallest: n Expression for the next number: $n + 2$ Expression for the largest: $n + 4$

These were easy. The three consecutive even numbers almost fooled me, but then I realized that even numbers are two away from each other.



Now you can tell people that you know another language. I think it's fun turning sentences into the math language of algebra.



Match the words on the left with the expressions on the right.

Steve had an unknown amount of money in his pocket. He then lost \$23. What is the expression that shows how much money he has now? _____

$$n \div 23$$

Adam found a bag of money that he split with 22 friends. What is the expression that shows the amount of money that each person has? (Don't forget to include Adam.) _____

$$n - 23$$

Rachel found a box with money in it. What is the expression for this money? _____

$$n + 23$$

Steve cashed his paycheck and then found \$23. What is the expression that shows how much money Steve has now? _____

$$n - 15$$

A dog lost 15 pounds. What is the expression that shows the dog's current weight? _____

$$n$$

Ryan weighs 6 times as much as his dog. What is an expression for Ryan's weight if you call his dog's weight n ? _____

$$\pi n$$

What is an expression for the value of an unknown number of dimes? _____

$$4n$$

Jamie is 7 years older than Nancy. What is an expression for Jamie's age if Nancy is called n ? _____

$$6n$$

Fritz is 6 years older than twice his brother's age. What is an expression for Fritz's age if his brother's age is called n ? _____

$$10n$$

What is an expression for the circumference of a circle with a diameter of n inches? _____

$$50n$$

What is an expression for the value of an unknown number of half-dollars? _____

$$2n + 6$$

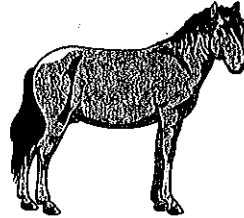
If there are 4 times as many dimes in a pile of coins as there are nickels, what is the expression for the number of dimes if you call the number of nickels n ? _____

$$n + 7$$

The Language of Algebra

Level 1

1) A horse cost \$900 more than the saddle. Write an expression for the saddle and one for the horse.



2) Nicki can throw a ball 5 times farther than Eric. Write an expression for the distance Eric can throw the ball and an expression for the distance Nicki can throw the ball.

3) Briana's weight is four times that of her baby sister. Write an expression for each of their weights.

4) Write an expression for the number of feet in an unknown number of yards.

5) Write an expression for the number of hours in an unknown number of days.

6) Write an expression for the perimeter of a square where each side is called n .

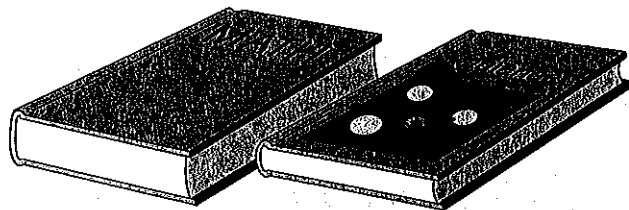


7) Write an expression for the value of an unknown number of nickels.

8) Write expressions for three consecutive numbers. Hint: Call the smallest number n .

9) Bob weighs 17 pounds more than Steve. Write expressions for each of their weights.

10) A math book weighs 2 pounds more than a science book. Write expressions for the weight of each book.



The Language of Algebra

Level 2

1) Dave worked n hours for \$8 per hour. Write an expression for the amount of money Dave earned.

2) Write an expression for the value of a pile of quarters.



3) Write an expression for the area of a square with sides that are each n feet long.

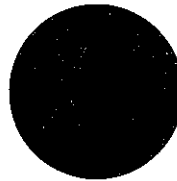
4) Write an expression for 3 consecutive multiples of 5 with n being the smallest number.

5) Stacy brought her entire savings account to the store. She spent \$50 on a dress and then she found \$18 on the sidewalk on her way home. Write an expression for the amount of money Stacy has left.

6) Write an expression for the distance a car traveling at 65 mph goes in an unknown number of hours.

7) Sara earns \$580 more than one half of Karen's salary. Write an expression for Sara's salary where n stands for Karen's salary.

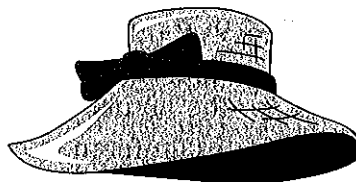
8) Write an expression for the diameter of a circle with a circumference of n .

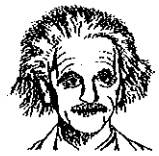


9) Write an expression for the number of hours in an unknown number of seconds.



10) If a hat and coat together cost \$185 and the hat cost n dollars, write an expression for the cost of the coat.





The Language of Algebra

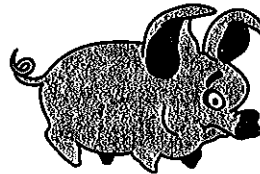
Einstein Level

1) Write an expression for the perimeter of a rectangle that has a length which is three times its width.

2) Warren has twice as many quarters as dimes and twice as many nickels as quarters. Write an expression for the number of quarters, the number of dimes, and the number of nickels.

3) Write an expression for the value of the quarters, dimes and nickels in the previous problem.

4) A farmer has 50 pigs and an unknown number of cows on his farm. Write an expression for the number of legs on the farm where n is the number of cows. (Make sure you include the farmer.)



5) Dan receives \$9 per hour plus a bonus of \$55 each week. Write an expression for the amount of money Dan makes in a year (52 weeks) if he works the same number of hours each week.

6) Write an expression for the average of 4 consecutive even numbers where n is the smallest number.

7) A garden's length is five times its width. Write an expression for the number of sections of 10 foot fence that are needed for this garden.

8) A farmer has pigs and chickens. If the farmer has 75 total animals, write an expression for the number of chickens. Pigs: n
Chickens:

9) Write an expression for the radius of a circle with a circumference of n .

10) Write an expression for the number of revolutions a tire with a circumference of n feet makes when it travels one mile.

