

Letters that stand for an unknown number are called variables.

An example is using the letter **a** to represent the number of apples Mr. Turner plans on eating this week. *You* don't know how many he wants to eat, so it is unknown.

An expression is a mathematical combination of numbers and variables.

An example is saying that Mr. Mattatall will eat four more apples than Mr. Turner this week, so he will eat  $1 \cdot a + 4$  apples.

When you know that an expression is equal to a number, then you have an equation.

An example is that you know Mr. Mattatall ate 10 apples this week. Since Mr. Mattatall eats four more apples than Mr. Turner, you know that  $1 \cdot a + 4 = 10$ . Notice that there is always an equals sign (=), in an equation. With an equation, you can find the unknown number.

Put each example in the correct column:

Variable	Expression	Equation
$z$	$1 \cdot m$	$2 + 1 \cdot y = 19$
$\lambda$	$935 - 34 \cdot r$	$6b + 3 = 7 - 4b$
$a$	$20 - 3 \cdot p$	$5 \cdot w = 5$
	$1 \cdot d \div 5$	
	$6 \cdot m + 3$	
	$9 + 1 \cdot x$	
$v$	$4 + 3n + 5$	

Challenge

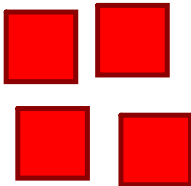
Variable



Expression



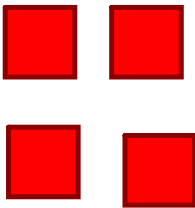
+



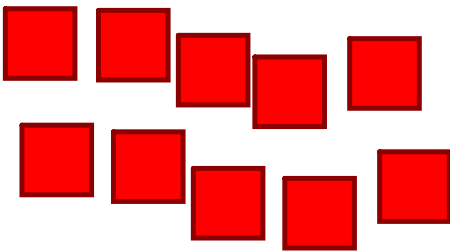
Equation



+



=



Which variable would you use for. . .

- The number of pencils Mr. Mattatall lost this year?
- The number of sisters Mr. Mattatall has?
- The cups of coffee Mr. Mattatall has drank this year?
- The number of pizzas Mr. Turner has eaten?
- The number of steps Mr. Turner has climbed?
- The height of Mr. Turner?

m  
s  
c  
p  
s  
h

### Challenge

- The radius of a circle?
- The width of a rectangle?
- The perimeter of a square?
- The area of a triangle?
- The volume of a dodecahedron?

r  
w  
p  
A  
V

---

Is this a variable, an expression, or an equation? How do you know?

$$8 \cdot u + 9 - 2 \cdot u$$