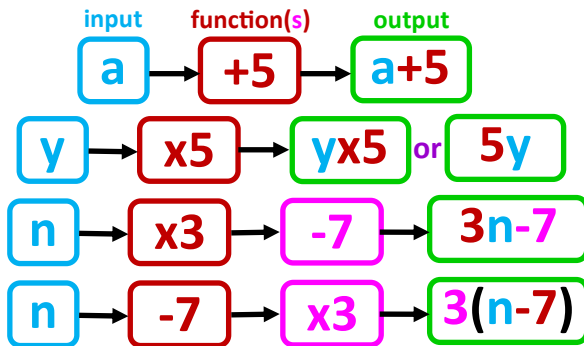


## Finding an algebraic rule



## Using an algebraic rule

$b+12$  if  $b=7$ ,  $b+12=19$   
if  $b=3$ ,  $b+12=15$

$n+m$  if  $n=7$  and  $m=3$ ,  $n+m=10$   
if  $n=9$  and  $m=-7$ ,  $n+m=2$

$3t+8$  if  $t=3$ ,  $3t+8=3 \times 3+8=17$   
if  $t=7$ ,  $3t+8=3 \times 7+8=28$

## Finding possible values

$a + b = 6$	$3c - 7 = y$
$a = 4, b = 2$	$c = 4, y = 5$
$a = 3, b = 3$	$c = 2, y = -1$
$a = 1, b = 5$	$c = 10, y = 23$
$a = -3, b = 9$	$c = 100, y = 293$

# Year 5/6 - Algebra

@MrH\_T77

## Solving equations

$c + 13 = 22$

c	13
22	

$c = 22 - 13 = 9$

$3f = 36$

f	f	f
36		

$f = 36 \div 3 = 12$

$2y - 7 = 49$

y	y	7
49		

$2y = 49 + 7 = 56$   
 $y = 28$

## Using a formula

Algebraic formulae are rules which describe a mathematical relationship - e.g.

The formula for the area of a triangle

$$\text{Area} = b \times h \div 2$$

The total cost of a taxi journey (C) is £1.50 and 30p for the number of miles travelled (m).

$$C = \text{£}1.50 + \text{£}0.30 \times m$$

## Algebra and word problems

Word problems can be shown algebraically.

I think of a number  $\rightarrow x$

I multiply it by 6  $\rightarrow 6x$

I then add 4  $\rightarrow 6x+4$

My new number is 34  $\rightarrow 6x+4=34$

$$6x+4=34 \rightarrow 6x=30 \rightarrow x=5$$

Alice, Sophie and Matt are siblings.

Alice is twice as old as Matt. Sophie is 7 years older than Matt.

If Sophie is 12, how old is Alice?

$A = 2M$       If  $S = 12, M = 5$  and

$M = S - 7$        $A = 2 \times 5 = 10$

Lenny and Carl have £120 between them.

Lenny has three times as much as Carl.

How much do they have each?

$$L + C = \text{£}120$$

$$L = 3C$$

$$3C + C = \text{£}120 = 4C$$

$$\text{Carl} = \text{£}30$$

$$\text{Lenny} = \text{£}30 \times 3 = \text{£}90$$